

**IT IS THE VENDOR'S RESPONSIBILITY TO  
CHECK FOR ADDENDA PRIOR TO SUBMITTING PROPOSALS**

**NOTICE TO BIDDERS  
SPECIFICATION NO. 04-107**

The City of Lincoln, Nebraska intends to purchase or lease purchase and invites you to submit a sealed bid for:

**SIX (6) WITH OPTION FOR FOUR (4) ADDITIONAL  
1250 GALLON PER MINUTE FIRE PUMPERS  
FOR  
LINCOLN FIRE DEPARTMENT**

Sealed bids will be received by the City of Lincoln, Nebraska on or before 12:00 noon **Wednesday, June 2, 2004**, in the office of the Purchasing Agent, Suite 200, K Street Complex, Southwest Wing, 440 South 8th Street, Lincoln, Nebraska 68508. Bids will be publicly opened and read aloud at the K Street Complex.

Bidders should take caution if U.S. mail or mail delivery services are used for the submission of bids. Mailing should be made in sufficient time for bids to arrive in the Purchasing Division, prior to the time and date specified above. Late bids will not be considered.

# Lincoln Fire Department Pumper Truck

## GENERAL INFORMATION

### **1. INTENT OF SPECIFICATIONS**

- 1.1 The City of Lincoln intends to purchase or lease purchase six (6) complete 1250 per minute Fire Pumpers as specified herein.
  - 1.1.1 This bid is for a total of six (6) identical Fire Pumpers with the option to purchase/lease purchase four (4) additional units.
- 1.2 Units must meet specific requirements as described herein for type of construction, test compliance, finish, material preferences, equipment and appliances.
  - 1.2.1 Construction must be heavy duty and ample safety factors must be provided to carry loads as specified.
  - 1.2.2 The pumper shall conform to the National Fire Protection Association Standard for Automotive Fire Pumper, #1901, in its most recent edition, unless otherwise specified in this document.
  - 1.2.3 Only the specified firefighting support equipment listed in these specifications shall be provided.
  - 1.2.4 The pumper shall further conform to all Federal Motor Vehicle Safety Standards, and State regulations to include but not limited to OSHA<ANSI> and UL specifications.
- 1.3 The Pumper furnished under these specifications shall be new 2004 of the latest improved model in current production as offered to the Fire Pumper industry.
  - 1.3.1 The construction method employed will be in such a manner as to allow ready removal of any component for service or repair.
- 1.4 Examples listed are to show the type, class and quality of the Pumper desired.
  - 1.4.1 Please read section ten (10) of the Instructions to Bidders, **BRAND NAMES**
- 1.5 Bidders are cautioned to read the specifications carefully, the specifications may include special requirements not commonly offered by the manufacturer.
- 1.6 Do not assume the standard unit meets all detailed specifications merely because it is listed.

### **2. BID COMPLIANCE**

- 2.1 Minor changes or deviations from these specifications, as long as these minimum requirements are not violated will be considered at the sole discretion of the City of Lincoln.
  - 2.1.1 Deviations from specifications shall be itemized on bidder's letterhead attached to the proposal form, and shall reference the specific section of the specification for which exception is taken.
  - 2.1.2 The City also reserves the right to accept or reject any or all deviation and alternate bids.
- 2.2 Bidder shall furnish satisfactory evidence of their ability to design, engineer and construct the Pumper specified and shall state the location of the factory producing the Pumper.
- 2.3 Bidder shall also substantiate that they are in a position to render prompt and proper service and to furnish replacement parts for the Pumper.
- 2.4 Each bid must be accompanied by a set of detailed contractor's specifications.
  - 2.4.1 Detailed specifications must be in the same sequence as the advertised specifications for ease of comparison.
  - 2.4.2 Detailed specifications shall include size, location, type and model of all component parts being furnished.
  - 2.4.3 Detailed information shall be provided on the materials used to construct all facets of the Pumper body
- 2.5 All equipment supplied with the unit shall be mounted by the bidder as per specifications
  - 2.5.1 Final location of equipment to be mounted will be determined at the pre-construction conference..

### **3. PRICE PROPOSAL**

- 3.1 Each bidder's proposal must include all items required in the specifications unless a specific exception is taken.
- 3.2 The proposal shall also include the total purchase price for each Pumper, the total price for all six (6) Pumpers with option for four (4) additional units as well as lease/purchase payment schedule noting the lease rate factor, interest rate and specific details of the lease/purchase.

- 3.3 The City's intent is to receive pricing with trade-ins and the pricing for outright purchase.
  - 3.3.1 Depending on which method is in the best interest of the City, the award will be accordingly.
    - 3.3.1.1 City could award with trade-in or without trade-in and sell the trade-ins outright.

**4. CERTIFICATE OF INSURANCE**

- 4.1 Successful bidder shall furnish a Certificate of Product Liability Insurance for a minimum of \$10,000,000.
- 4.2 This certificate shall be from the primary builder only.
- 4.3 The Certificate must be made out to the City of Lincoln and must be original.

**5. REFERENCE LIST**

- 5.1 Each bid shall be accompanied by a list of at least fifty (50) similarly constructed Pumpers presently in service.
- 5.2 Each reference must be for an Pumper built of the same construction style as these specifications call for.
- 5.3 List shall include customer's name, address, date placed in service and a current contact with phone number.

**6. VEHICLE DRAWINGS**

- 6.1 The Lincoln Fire Department has included a set of drawings which show locations and items required, as well as approximate compartment sizes and configuration.
  - 6.1.1 Review these drawings carefully to insure that your proposal includes all required items.
- 6.2 If standard produced unit compartments differ the City reserves the right to accept or reject said units.
- 6.3 **The following drawing views shall be provided by bidder with bid documents:**
  - 6.3.1 Streetside Graphics Detail
  - 6.3.2 Curbside Graphics Detail
  - 6.3.3 Front & Rear Graphics Detail
  - 6.3.4 Streetside Exterior Detail
  - 6.3.5 Curbside Exterior Detail
  - 6.3.6 Front & Rear Exterior Detail
  - 6.3.7 Streetside Interior Detail
  - 6.3.8 Curbside Interior Detail
  - 6.3.9 Front & Rear Interior Detail
  - 6.3.10 Overhead Floor Detail
  - 6.3.11 Overhead Ceiling Detail

# Lincoln Fire Department Pumper Truck

## **GENERAL REQUIREMENTS**

### **7. CONSTRUCTION SAMPLE**

#### **7.1 BIDDERS MAY BE REQUIRED TO PRESENT TO THE CITY A PUMPER SIMILAR TO THE CONSTRUCTION SPECIFICATIONS FOR INSPECTION AND COMPARISON PRIOR TO BID AWARD.**

7.1.1 Inspection shall be within fourteen (14) calendar days of date of bid.

7.1.2 Pumper inspection may be in Lincoln, Nebraska, or at another location of a Pumper currently in service.

### **8. SERVICE REQUIREMENTS**

8.1 Each bidder shall supply with their proposal detailed information about bidder's ability to perform routine and emergency service on the Pumper after delivery.

8.2 Detailed information shall be provided on service facilities, personnel, service vehicles and the type and nature of repair work the bidder is able to provide.

8.3 Bidder shall state the number of miles from the City of Lincoln's facility to the nearest fully staffed repair facility operated by the bidder.

8.4 Should the bidder desire to have the City perform any or all the warranty work, they shall explain details of such arrangements, to include parts ordering, per hour rates to be paid to the City and for what type of service it includes.

### **9. LEASE PURCHASE OPTION**

9.1 Lease-purchase financing proposal shall be originated by the bidder of the Pumper.

9.2 Sample Lease Agreement and amortization schedule shall be provided with the Pumper proposal.

9.3 Bidders shall indicate rates for 7, and 10 year lease terms.

9.3.1 Bidders are to detail the payment terms for the Pumper on the bidder's proposal page, first payment shall be due one year in the arrears.

9.3.2 Any required prepayments or progress payments must be explained in detail.

9.3.3 If the City desires to pay off the lease before the full term there shall be no penalties applied.

9.4 Interest rates shall remain fixed for the term of the lease.

9.5 The City reserves the right to arrange its own leasing plan and to award the bid based on unit price bid.

### **10. INSULATION**

10.1 The module interior walls, roof and doors shall be insulated to enhance the interior environment and minimize the conduction of heat, cold and external noise from entering the module.

10.2 The module interior walls, roof and doors shall be insulated to enhance the interior environment and minimize the conduction of heat, cold and external noise from entering the module.

### **11. ELECTROLYSIS PREVENTION**

11.1 All external materials and fasteners shall be chosen to prevent electrolysis and corrosion due to dissimilar materials and exposure to the elements.

11.2 The following shall be considered a minimum requirement: all exterior fasteners to be stainless steel.

11.3 There shall be a rubber or plastic insulating material under all lighting, exterior hinges, all exterior compartment and module door latches, rear door hold opens and between cab and module.

11.4 To prevent long term electrolytic paint corrosion all components to be mounted on the module exterior shall be cut out prior to painting.

11.5 All exterior fasteners used to mount lights to the outside of the module shall be completely isolated from the painted module by using a nonferrous collapsible blind insert that is reusable.

COMPANY NAME \_\_\_\_\_

**PROPOSAL**  
**SPECIFICATION NO. 04-107**  
**Pumper for Lincoln Fire Department**

**BID OPENING TIME: 12:00 NOON**  
**DATE: June 2, 2004**

The undersigned bidder, having full knowledge of the requirements of the City of Lincoln for the below listed items and the contract documents (which include Notice to Bidders, Instructions to Bidders, this Proposal, Specifications, Contract, and any and all addenda) and all other conditions of the Proposal, agrees to sell to the City the below listed items for the performance of this Specification, complete in every respect, in strict accordance with the contract documents at and for unit prices listed below.

**ADDENDA RECEIPT:** The receipt of addenda to the specifications numbers \_\_\_\_\_ through \_\_\_\_\_ are hereby acknowledged. Failure of any bidder to receive any addendum or interpretation of the specifications shall not relieve the bidder from obligations specified in the bid request. all addenda shall become part of the final contract document.

**BIDDING SCHEDULE**

<u>ITEM</u>	<u>ITEM DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>TOTAL</u>
1.	<b>Pumper</b> MFG. _____  MODEL _____	6 EA.	\$ _____	\$ _____
2.	<b>Trade in:</b> 1990 Central States unit 8 1989 Smeal unit 12 1988 Smeal unit 14 1986 Smeal unit 22 1984 FMC unit 34 1980 Smeal unit E-11 1992 Ferrara unit 4 1992 Central States unit 5 1993 Central States unit 10 1994 E-One Unit 6 Less total trade-in		\$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____	\$ - _____
	GRAND TOTAL			\$ _____
3.	<b>LEASE-PURCHASE OPTION</b> <b><u>NOTE:</u></b> 1. Disclosure Statements and Sample Lease Agreements Must Accompany Your Proposal. 2. Payment Schedule: Annual Payments			
		<b><u>PAYMENT SCHEDULE</u></b>	<b><u>PAYMENT AMOUNT</u></b>	<b><u>RESIDUAL AMOUNT</u></b>
3.1	Three (3) Year Lease-Purchase	_____	\$ _____	\$ _____
3.2	Five (5) Year Lease-Purchase	_____	\$ _____	\$ _____
3.3	Seven (7) Year Lease-Purchase	_____	\$ _____	\$ _____

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**BID SECURITY IN THE AMOUNT OF FIVE PERCENT (5%) OF ITEM 1. TOTAL MUST ACCOMPANY THIS PROPOSAL.**

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AFFIRMATIVE ACTION PROGRAM: Successful bidder will be required to comply with the provisions of the City's Affirmative Action Policy (Contract Compliance, Sec. 1.16). The Equal Opportunity Officer will determine compliance or non-compliance with the City's policy upon a complete and substantial review of successful bidder's equal opportunity policies, procedures and practices.

The undersigned signatory for the bidder represents and warrants that he has full and complete authority to submit this proposal to the City, and to enter into a contract if this proposal is accepted.

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**RETURN 2 COMPLETE COPIES OF PROPOSAL & SUPPORTING MATERIAL.  
MARK OUTSIDE OF BID ENVELOPE:  
SEALED BID FOR SPEC. 04-107 Pumper Proposal**

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COMPANY NAME		BY (Signature)	
STREET ADDRESS or P.O. BOX		(Print Name)	
CITY, STATE	ZIP CODE	(Title)	
TELEPHONE No.	FAX No.	(Date)	
EMPLOYER'S FEDERAL I.D. NO. OR SOCIAL SECURITY NUMBER		ESTIMATED DELIVERY DAYS	
		GUARANTEED DELIVERY DAYS - 1 <sup>ST</sup> UNIT	
		GUARANTEED DELIVERY DAYS - REMAINING UNITS	

Bids may be inspected in the Purchasing Division offices during normal business hours, after tabulation by the purchasing agent. If you desire a copy of the bid tabulation to be mailed to you, you must enclose a self-addressed stamped envelope with your bidding documents. Bid tabulations can also be viewed on our website at: <http://www.ci.lincoln.ne.us/city/finance/purch/specindx.htm>

COMPANY NAME \_\_\_\_\_

**PROPOSAL**  
**SPECIFICATION NO. 04-107**  
**Out-Right Purchase of Pumper(s)**  
**from Lincoln Fire Department**

**BID OPENING TIME: 12:00 NOON**  
**DATE: June 2 , 2004**

The undersigned bidder, having full knowledge of the requirements of the City of Lincoln for the below listed items and the contract documents (which include Notice to Bidders, Instructions to Bidders, this Proposal, Specifications, Contract, and any and all addenda) and all other conditions of the Proposal, agrees to sell to the City the below listed items for the performance of this Specification, complete in every respect, in strict accordance with the contract documents at and for unit prices listed below.

**ADDENDA RECEIPT:** The receipt of addenda to the specifications numbers \_\_\_\_\_ through \_\_\_\_\_ are hereby acknowledged. Failure of any bidder to receive any addendum or interpretation of the specifications shall not relieve the bidder from obligations specified in the bid request. all addenda shall become part of the final contract document.

**BIDDING SCHEDULE**

<u>ITEM</u>	<u>ITEM DESCRIPTION</u>	<u>QUANTITY</u>	<u>TOTAL</u>
1.	Sale Price for 1990 Central States unit 8	1 ea.	\$ _____
2.	Sale Price for 1989 Smeal unit 12	1 ea.	\$ _____
3.	Sale Price for 1988 Smeal unit 14	1 ea.	\$ _____
4.	Sale Price for 1986 Smeal unit 22	1 ea.	\$ _____
5.	Sale Price for 1984 FMC unit 34	1 ea.	\$ _____
6.	Sale Price for 1980 Smeal unit E-11	1 ea.	\$ _____
7.	Sale Price for 1992 Ferrara unit 4	1 ea.	\$ _____
8.	Sale Price for 1992 Central States unit 5	1 ea.	\$ _____
9.	Sale Price for 1993 Central States unit 10	1 ea.	\$ _____
10.	Sale Price for 1994 E-One unit 6	1 ea.	\$ _____
	Total sale price for all units		\$ _____

***BID SECURITY IN THE AMOUNT OF FIVE PERCENT (5%) OF TOTAL PRICE MUST ACCOMPANY THIS PROPOSAL.***

**AFFIRMATIVE ACTION PROGRAM:** Successful bidder will be required to comply with the provisions of the City's Affirmative Action Policy (Contract Compliance, Sec. 1.16). The Equal Opportunity Officer will determine compliance or non-compliance with the City's policy upon a complete and substantial review of successful bidder's equal opportunity policies, procedures and practices.

The undersigned signatory for the bidder represents and warrants that he has full and complete authority to submit this proposal to the City, and to enter into a contract if this proposal is accepted.

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**RETURN 2 COMPLETE COPIES OF PROPOSAL & SUPPORTING MATERIAL.  
MARK OUTSIDE OF BID ENVELOPE:  
SEALED BID FOR SPEC. 04-107 Pumper Proposal**

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<b>COMPANY NAME</b>	<b>BY (Signature)</b>
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<b>STREET ADDRESS or P.O. BOX</b>	<b>(Print Name)</b>
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<b>CITY, STATE</b>	<b>ZIP CODE</b>	<b>(Title)</b>
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<b>TELEPHONE No.</b>	<b>FAX No.</b>	<b>(Date)</b>
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<b>EMPLOYER'S FEDERAL I.D. NO. OR SOCIAL SECURITY NUMBER</b>	<b>ESTIMATED DELIVERY DAYS</b>
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Bids may be inspected in the Purchasing Division offices during normal business hours, after tabulation by the purchasing agent. If you desire a copy of the bid tabulation to be mailed to you, you must enclose a self-addressed stamped envelope with your bidding documents. Bid tabulations can also be viewed on our website at: <http://www.ci.lincoln.ne.us/city/finance/purch/specindx.htm>



# Lincoln Fire Department Fire Pumper Trucks

## SPECIFICATIONS

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- |              |              |  |
|--------------|--------------|--|
| <p>_____</p> | <p>_____</p> | <p><b>1.   <u>MOTOR VEHICLE DEALER LICENCE</u></b></p> <p>1.1      The successful bidder shall hold at the time of the Bid opening a current Motor Vehicle Dealer Licence from the State of Nebraska.</p> <p>1.1.1    A copy of the bidder's Dealer Licence must be included in the proposal.</p> <p>1.1.2    Failure to hold a current Motor Vehicle Dealer Licence will cause the bid to be immediately rejected without further consideration.</p>  |
| <p>_____</p> | <p>_____</p> | <p><b>2.   <u>PERFORMANCE BOND</u></b></p> <p>2.1      The successful bidder shall, within 15 days of executing the contract, supply the City with a 100 percent performance bond.</p> <p>2.1.1    The performance bond shall be furnished by the manufacturer of the proposed apparatus.</p> <p>2.1.2    Bonds in the name of any sales agent or representative company shall not be acceptable.</p> <p>2.1.3    Failure to supply said performance bond shall result in forfeiture of the supplied bid bond to the City.</p>   |
| <p>_____</p> | <p>_____</p> | <p><b>3.   <u>BID BOND REQUIREMENTS</u></b></p> <p>3.1      Each bid shall be accompanied by a Bid Bond, Certified Check or Cash, in the amount of 5% of bid price.</p> <p>3.1.1    The Bid Bond shall be furnished by the manufacturer of the proposed apparatus.</p> <p>3.1.2    Bids shall remain firm for a period of sixty (60) days.</p> <p>3.1.3    An exception to this requirement shall result in the immediate rejection of the bid.</p>  |
| <p>_____</p> | <p>_____</p> | <p><b>4.   <u>INTENT OF SPECIFICATIONS</u></b></p> <p>4.1      It is the intent of these specifications to cover the furnishing and delivery to the City of a complete fire apparatus equipped as hereinafter specified.</p> <p>4.2      With a view to obtaining the best results and the most acceptable fire apparatus for service in the fire department, these specifications cover the general requirements as to the type of construction, together with certain details as to finish, equipment and appliances with which the successful bidder must conform.</p> <p>4.3      Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features.</p> <p>4.4      Bids shall only be considered from companies which have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years.</p> <p>4.5      Each bidder shall furnish satisfactory evidence of his ability to construct the apparatus specified, and shall state the location of the factory where the apparatus is to be built.</p> <p>4.5.1    The bidder shall also show they are in a position to render prompt service and to furnish replacement parts for said apparatus.</p> <p>4.5.1.1   Replacement parts shall be delivered within 48 hours of order unless otherwise agreed to.</p> <p>4.6      The City reserves the right to accept or reject any or all bids on such basis as the City deems to be in it's best interest.</p> |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- |       |       |  |
|-------|-------|--|
| _____ | _____ | <p><b>5.     <u>CONTRACTOR'S SPECIFICATIONS</u></b></p> <p>5.1     Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed.</p> <p>5.1.1     These specifications shall indicate size, type, model and make of all component parts and equipment.</p>   |
| _____ | _____ | <p><b>6.     <u>LATE PROPOSALS</u></b></p> <p>6.1     It is the bidder's responsibility to see that their proposals arrive on time.</p> <p>6.2     Late proposals, facsimiles, telegraphed, or telephone bids shall not be considered.</p>   |
| _____ | _____ | <p><b>7.     <u>SAFETY REQUIREMENTS</u></b></p> <p>7.1     It is expected that the Bidder shall meet all Local, State and Federal safety standards and laws which are in effect on the date of the bid for the item(s) being specified and the particular use for which they are meant.</p>  |
| _____ | _____ | <p><b>8.     <u>ACQUAINTANCE WITH SPECIFICATIONS</u></b></p> <p>8.1     It is the responsibility of the bidder to review all of the bidding requirements.</p> <p>8.1.1     Failure of a bidder to be acquainted with this information shall not relieve him/her from any obligations of the bid requirements.</p>  |
| _____ | _____ | <p><b>9.     <u>NFPA PAMPHLET 1901 - 2003</u></b></p> <p>9.1     The National Fire Protection Association Pamphlet #1901 - 2003 newest edition, is hereby adopted and made a part of these specifications, the same as if they were written here in full detail, insofar as they apply, with the exception of the section dealing with "Equipment Recommended for Various Types of Apparatus".</p>   |
| _____ | _____ | <p><b>10.    <u>QUALITY AND WORKMANSHIP</u></b></p> <p>10.1    The design of the apparatus shall embody the latest approved automotive engineering practices, experimental designs and methods shall not be acceptable.</p> <p>10.2    The workmanship shall be of the highest quality in its respective field.</p> <p>10.2.1    Special consideration shall be given to the following points:</p> <p>10.2.1.1    accessibility of the various units which require periodic maintenance operations,</p> <p>10.2.1.2    ease of operation (including both pumping and driving) and symmetrical proportions.</p> <p>10.3    Construction shall be rugged and ample safety factors shall be provided to carry loads as specified.</p> |
| _____ | _____ | <p><b>11.    <u>LIABILITY</u></b></p> <p>11.1    The bidder, if his bid is accepted, shall defend any and all suits and assume all liability for the use of any patented process, device or article forming a part of the apparatus or any appliance furnished under the contract.</p>   |
| _____ | _____ | <p><b>12.    <u>WARRANTY</u></b></p> <p>12.1    A copy of the warranties for the pump, body, paint, and water tank shall be furnished with each bidder's proposal.</p> <p>12.2    The tank shall have a lifetime warranty from UPF.</p>  |
| _____ | _____ | <p><b>13.    <u>WARRANTY WORK</u></b></p> <p>13.1    As a minimum requirement of the City, request a (2) year, unlimited hours, 100% parts and labor warranty on the entire vehicle except wear items.</p> <p>13.1.1    All warranty work shall be performed "no charge" whenever the City chooses, regardless of the location.</p>  |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- 13.1.2 Should the vendor be unavailable to perform the warranty work at a specific time or location, the City will have the work done and bill the vendor for the related labor and materials charges.
- 13.1.3 In addition, all factory authorized recall work shall be picked up and delivered by the vendor at no cost to the City.

\_\_\_\_\_ 14. **GENERAL CONSTRUCTION**

- 14.1 The apparatus shall be designed and the equipment mounted with due consideration to distribution of load between the front and rear axles.
  - 14.1.1 Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.
  - 14.1.2 The design of the chassis shall be based upon a "minimum" "gross Vehicle Weight" (GVW) of 40,000 pounds.
  - 14.1.3 The actual GVW shall be calculated prior to manufacturing of the unit/s.
  - 14.1.4 Where necessary, appropriate modifications to any and all chassis components shall be made by the manufacture to insure safe operation and sufficient load carrying capabilities to meet the intended use.
  - 14.1.5 Said modifications shall be the responsibility of the manufacturer and shall result in no additional cost to the City.

\_\_\_\_\_ 15. **BID FORMS / SPECIFICATIONS**

- 15.1 All bids shall be submitted on the attached bid form.
  - 15.1.1 The bid form and these specifications shall be filled out by checking either the "YES" or "NO" column for each and every section / paragraph.
  - 15.1.2 Failure to use this form and / or these specifications shall be cause for immediate rejection of any bid.

\_\_\_\_\_ 16. **EXCEPTION TO SPECIFICATIONS**

- 16.1 The following chassis, pump and body specifications shall be strictly adhered to.
  - 16.1.1 Exceptions shall be allowed if they are equal to or superior to those specified (as judged by the City), and provided they are listed and fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS".
  - 16.1.2 Exception lists shall reference to the specification page number, section number and line number.
  - 16.1.3 Each check in the "NO" column shall be listed and fully explained.
  - 16.1.4 Where no check is made at a particular paragraph either "YES" or "NO", it shall be assumed the bidder is taking exception to that paragraph.
  - 16.1.5 Where a paragraph is checked in the "NO" column and the Exceptions to Specifications do not explain the check mark, it shall be assumed that the bidder does not wish to conform to the buyers wishes.

\_\_\_\_\_ 17. **PROPOSALS TAKING TOTAL EXCEPTION TO THESE SPECIFICATIONS WILL BE IMMEDIATELY REJECTED.**

- 17.1 The buyer is aware that all bidders shall have to take some exceptions therefore, **BIDDERS THAT TAKE NO EXCEPTIONS shall BE REQUIRED TO MEET EVERY PARAGRAPH TO THE FULLEST EXTENT SHOULD THEIR BID BE ACCEPTED.**
- 17.2 It is the intent of the City to receive bids that do not require telephone calls or other communications to ascertain what a bidder is intending to supply.
- 17.3 Upon delivery, the apparatus shall be inspected against THESE specifications and not those supplied by the bidder with their proposal.
- 17.4 Deviations shall not be acceptable unless they were noted as exceptions at the time of bid and the apparatus shall be rejected until said deviations are corrected to the satisfaction of the buyer.
- 17.5 Decisions regarding equal to or better than, shall be the sole responsibility of the City rather than those companies submitting bids.
- 17.6 When exceptions are not taken but inconsistencies are noted in the submitted detailed specifications the bid may be rejected.

- \_\_\_\_\_ 18. **PROPOSAL SEQUENCE**  
18.1 Bid proposals shall be submitted in the same sequence as these specifications for ease of checking compliance.
- \_\_\_\_\_ 19. **BASIC LIMITED WARRANTY**  
19.1 The apparatus shall be free of defects in material and workmanship for a period of two (2) year after the date the vehicle is accepted by the City.  
19.1.1 Prorated warranties will not be considered or accepted, **No Exceptions.**  
19.2 Five Year Pump Warranty  
19.2.1 The fire pump shall be warranted by Waterous for a period of not less than five (5) years from the date of acceptance by the fire department.  
19.2.2 The pump warranty shall include all parts and labor.
- \_\_\_\_\_ 20. **BODY STRUCTURAL INTEGRITY WARRANTY**  
20.1 The body shall be free of structural or design failure or workmanship for a period of ten (10) years from, and after the date the vehicle is accepted by the City or 100,000 miles, whichever comes first.  
20.1.1 Prorated warranties will not be considered or accepted, **No Exceptions.**
- \_\_\_\_\_ 21. **CORROSION AND PAINT LIMITED WARRANTY**  
21.1 The body shall be free of rust, corrosion, bubbling, chipping or peeling as a result of a defect in the method of manufacture for a period of seven (7) years after the date the vehicle is accepted by the City.  
21.1.1 Prorated warranties will not be considered or accepted, **No Exceptions.**
- \_\_\_\_\_ 22. **TRAINING**  
22.1 After delivery, a factory representative with full knowledge and skills in said fire unit shall be present to familiarize member of the fire departments designated by the chief of maintenance with the basic operation of the unit and it's components.  
22.2 A structured eight hour program covering proper operation and operator prevented maintenance shall be presented on three consecutive days.  
22.2.1 The course outline must be submitted to the chief of maintenance for approval prior to delivery.  
22.3 The bidder agrees to allow the fire department to videotape the instructional presentation for future reference and training.
- \_\_\_\_\_ 23. **DELIVERY**  
23.1 The apparatus shall be delivered by the bidder under its own power within 240 calendar days but no more than 300 calendar days from the date of notice of award, with all equipment specified, to Lincoln Fire & Rescue Maintenance Division, 300 South St., Lincoln, NE 68502. (Rail or truck freight is not acceptable.)  
23.1.1 Upon the first arriving unit, all additional units delivered to arrive thirty (30) calendar days apart.  
23.2 Bidder must submit a firm delivery time (number of calendar days from date of order to date of delivery) of said apparatus with the bid.  
23.2.1 Quoting number of days after receipt of all components is unacceptable.
- \_\_\_\_\_ 24. **PRE-DELIVERY SERVICE**  
24.1 After transportation from the factory and immediately prior to delivery, the apparatus shall receive pre-delivery service consisting of an engine oil and filter change, chassis lubrication, adjustment of the engine to the manufacturer's specifications, and a complete inspection including all electrical and mechanical devices for proper operation and correction of leaks or obvious problems.
- \_\_\_\_\_ 25. **EQUIPMENT MOUNTING**  
25.1 All equipment supplied with the apparatus shall be mounted by the bidder as per the fire department's instruction.  
25.2 Locations of the equipment to be mounted will be determined at the pre-construction conference.

## TECHNICAL SPECIFICATIONS

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|-------|-------|-------|--|
| _____ | _____ | 1.    | <b><u>OVERALL HEIGHT</u></b>   |
|       |       | 1.1   | The overall height of the vehicle shall not exceed 9' 7" from the ground.  |
| _____ | _____ | 2.    | <b><u>OVERALL LENGTH</u></b>   |
|       |       | 2.1   | The overall length of the vehicle shall not exceed 30' 6", unless specifically agreed to in writing by the Fire Department.  |
| _____ | _____ | 3.    | <b><u>INDEPENDENT FIRE PUMP MOUNTING</u></b>   |
|       |       | 3.1   | The fire pump shall be mounted within a separate body module that is not directly connected to the apparatus body or shall be mounted equal to or superior to this specification.. |
|       |       | 3.1.1 | This module shall be mounted to the frame in four locations and in such a manner as to reduce the likelihood of a collision causing the pump casing to crack.                      |
|       |       | 3.2   | The point where the pump module is mounted to the frame shall be reinforced appropriately to carry the expected load for the life of the apparatus.                                |
|       |       | 3.3   | Plumbing as well as the pump shall be integral with the pump module as much as possible to facilitate the changing of the chassis should the apparatus be involved in a collision. |
| _____ | _____ | 4.    | <b><u>SIDE MOUNT FIRE PUMP</u></b>   |
|       |       | 4.1   | The fire pump shall be a Waterous CSY 1250 GPM side mount pump.  |
| _____ | _____ | 5.    | <b><u>SINGLE STAGE FIRE PUMP</u></b>   |
|       |       | 5.1   | The pump shall be a single stage centrifugal class "A" rated fire pump, designed specifically for the fire service.  |
| _____ | _____ | 6.    | <b><u>INDEPENDENT THIRD PARTY PUMP CERTIFICATION</u></b>   |
|       |       | 6.1   | The fire pump shall be tested and certified, by an independent third party testing company, to perform as listed below:  |
|       |       | 6.1.1 | 100% of rated capacity at 150 pounds net pressure.   |
|       |       | 6.1.2 | 70% of rated capacity at 200 pounds net pressure.  |
|       |       | 6.1.3 | 50% of rated capacity at 250 pounds net pressure.  |
|       |       | 6.1.4 | 100% of rated capacity at 165 pounds net pressure.   |
|       |       | 6.2   | The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI.  |
|       |       | 6.3   | The pump shall be fully tested at the pump manufacturers factory to the performance spots as outlined by the latest NFPA Pamphlet No. 1901.  |
|       |       | 6.4   | The pump shall be free from objectionable pulsation and vibration.   |
| _____ | _____ | 7.    | <b><u>RELIEF VALVE W/INDICATOR</u></b>   |
|       |       | 7.1   | There shall be a Waterous thermal relief valve, installed on the pump.   |
|       |       | 7.2   | A light installed on the pump operator's panel shall indicate when the valve has been activated so the pump operator may take corrective action.                                   |
| _____ | _____ | 8.    | <b><u>IMPELLERS</u></b>  |
|       |       | 8.1   | The pump impellers shall be bronze, specifically designed for the fire service   |
|       |       | 8.1.1 | The stripping edges shall be located on opposite sides of the impellers  |
|       |       | 8.1.2 | The impeller shaft shall be stainless steel, supported at each end by oil or grease lubricated anti-friction ball bearings.  |
|       |       | 8.1.3 | The bearings used on the impeller shaft shall be automotive type bearings.   |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | 9   | <p><b><u>MECHANICAL SEALS</u></b></p> <p>9.1 The pump shall be equipped with self-adjusting, maintenance free mechanical shaft seals that shall not require manual adjustment.</p>   |
| _____ | _____ | 10. | <p><b><u>IMPELLER WEAR RINGS</u></b></p> <p>10.1 The pump shall be equipped with replaceable bronze wear rings</p>   |
| _____ | _____ | 11. | <p><b><u>PUMP CASING</u></b></p> <p>11.1 The pump casing shall be cast as two (2) horizontally split pieces.</p> <p style="padding-left: 20px;">11.1.1 The casing shall be made of high tensile, close-grained gray iron with a minimum tensile strength of 40,000 PSI.</p>  |
| _____ | _____ | 12. | <p><b><u>PUMP TRANSMISSION</u></b></p> <p>12.1 The pump transmission shall be of the latest design, incorporating a high strength involute tooth-form Morse Hy-Vo chain capable of operating at high speeds while providing smooth and quiet transmission of power.</p> <p style="padding-left: 20px;">12.1.1 Drive and driven sprockets shall be made of alloy steel with teeth of an involute form.</p> <p style="padding-left: 20px;">12.1.2 Drive line shafts shall be made from alloy steel forgings, hardened and ground to size.</p> <p style="padding-left: 20px;">12.1.3 Deep groove, anti-friction ball bearings shall be used throughout the pump transmission.</p> <p style="padding-left: 20px;">12.1.4 The pump shift engagement shall be accomplished by a free sliding collar that uses an internal locking mechanism to insure that the collar will stay in road or pump position.</p> <p>12.2 Primary lubrication for the pump transmission bearings, sprockets and chain shall be provided by a splash system.</p> <p style="padding-left: 20px;">12.2.1 A supplementary pressure system shall also be employed which shall include a strainer, an oil circulation pump driven by the impeller shaft, and a spray bar inside the case to apply oil to the inside of the chain just before it engages the driven sprocket.</p> <p>12.3 The pump and transmission shall be easily separable.</p> <p style="padding-left: 20px;">12.3.1 A two piece shaft shall be splined allowing for individual repair of either the pump or transmission.</p> <p>12.4 All drive line components shall have a torque rating equal to or greater than the final net engine torque.</p> |
| _____ | _____ | 13. | <p><b><u>AIR OPERATED PUMP SHIFT</u></b></p> <p>13.1 The pump shift actuating mechanism shall be air operated from a valve in the cab identified as "PUMP SHIFT".</p> <p style="padding-left: 20px;">13.1.1 Full instructions for shifting the pump shall be inscribed on the valve plate.</p> <p>13.2 A manual override system shall be supplied for the pump shift should a problem develop in the chassis air brake system.</p> <p style="padding-left: 20px;">13.2.1 Controls for the override shall be located at the lower right hand corner of the pump panel.</p> <p style="padding-left: 20px;">13.2.2 Full instructions shall be inscribed on a plate near the pump shift controls.</p>  |
| _____ | _____ | 14. | <p><b><u>PUMP SHIFT INDICATING LIGHTS</u></b></p> <p>14.1 There shall be two (2) green pump system shift indicator lights in the chassis cab.</p> <p style="padding-left: 20px;">14.1.1 The first light shall become energized when the chassis parking brake has been set and the pump has completed it's shift into pump gear and shall be labeled "Pump Engaged".</p> <p style="padding-left: 20px;">14.1.2 The second light shall become energized and when the pump and the chassis transmissions have been shifted completely into the correct gears for pumping, this light shall be labeled "OK to Pump".</p> <p style="padding-left: 20px;">14.1.3 There shall be one (1) green pump system shift indicator light located on the operator's panel.</p>  |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

14.1.3.1 This light shall only become engaged when the chassis parking brake has been set, and when the pump and the chassis transmissions have been completely shifted into the correct gears.

14.1.3.2 The light shall be located adjacent to the throttle control and shall be labeled "Warning: Do Not Open Throttle Unless Light Is On".

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**15. WATEROUS PRIMER**

15.1 The priming pump, priming valve and piping assembly shall be included in the pump assembly.

15.1.1 The priming pump shall be an electrically driven rotary vane pump mounted firmly within the pump area.

15.1.2 When the priming pump is in use, it shall be automatically lubricated internally from the primer oil tank with oil that is environmentally safe.

15.1.3 The pump shall be controlled from the pump operator's panel.

15.1.4 An indicator light on the pump panel shall show when the primer motor is engaged.

15.1.5 The pump shall be capable of creating suction and discharging water from a lift of 10 feet through 20 feet of suction hose of the appropriate size, in not more than 30 seconds starting with the pump dry.

15.1.6 It shall be capable of developing a vacuum of 22 inches at an altitude of up to 1000 feet.

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**16. PRIMER OIL TANK**

16.1 A Watrous primer oil tank shall be provided and installed to supply the pump.

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**17. WATEROUS DISCHARGE RELIEF VALVE**

17.1 The discharge relief valve system shall be positive and quick acting, with have instantaneous hydraulic lockout that does not require the operator to cancel out or disturb the pressure setting.

17.1.1 With the pump operating from draft and delivering its rated capacity at 150 psi, if lines are shut down, the increase in discharge pressure shall not exceed 20 psi.

17.1.2 The relief valve control (Pilot Valve) shall be protected from malfunction due to sand or other sediment in the water by a strainer which may be removed, cleaned and replaced from the operator's panel while the pump is operating and without shutting down the continuous flow of water.

17.2 Relief valve indicator lights shall be mounted on the panel adjacent to the pilot valve assembly.

17.2.1 The indicator lights shall be Amber, marked Open to indicate the relief valve is bypassing and Green, marked Closed to indicate the relief valve is fully closed.

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**18. PUMP DRAIN VALVE**

18.1 A manifold drain valve assembly shall be supplied.

18.1.1 This drain shall provide the capability to drain the entire pump by pulling a single control.

18.1.2 The valve assembly shall consist of a stainless steel plunger in a bronze body with multiple ports.

18.1.3 The drain valve control shall be mounted on the left side pump panel and identified as "Pump Drain".

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**19. PUMP LUBRICATION**

19.1 Grease zerk(s) shall be installed in a convenient location and connected to the pump lubrication points by copper tubing.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>20.   <u>HEAT EXCHANGER</u></b><br>20.1     The engine; (chassis), providing power to drive the fire pump, shall have a supplementary cooling system that uses water from the discharge side of the pump to cool the engine coolant through the use of a closed heat exchanger.<br>20.1.1     The water from the pump and the engine coolant shall not be intermixed.<br>20.1.2     This cooling system shall be controlled by a valve on the pump operator's station.   |
| _____ | _____ | <b>21.   <u>½" PUMP COOLER LINE</u></b><br>21.1     There shall be one (1) ½" pump cooling/recirculating line from the pump, which is connected directly into the booster tank with a quarter-turn ball valve on operators panel to be labeled "Pump Cooler On/Off".  |
| _____ | _____ | <b>22.   <u>PUMP COOLER CHECK VALVE</u></b><br>22.1     There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.   |
| _____ | _____ | <b>23.   <u>INTAKE RELIEF VALVE</u></b><br>23.1     There shall be an Elkhart 40-41 intake relief valve installed on the suction side of the pump.<br>23.1.1     The valve shall be the preset type, adjustable from 75 to 250 PSI, and shall be designed to prevent vibration from altering the setting.<br>23.1.2     The relief outlet shall be directed below the pump with the discharge terminating in a 2-1/2" male NST connection.<br>23.1.3     The discharge shall be away from the pump operator and labeled "Do Not Cap".       |
| _____ | _____ | <b>24.   <u>33,000 BTU PUMP COMPARTMENT HEATER</u></b><br>24.1     There shall be a 33,000 BTU heater installed in the pump compartment.<br>24.1.1     The heater shall have an electric fan controlled by a switch on the pump operator's panel.<br>24.1.2     The heating coil shall be connected to the engine cooling circuit with valves in the pump compartment to control the circulation of the engine coolant through the heater.<br>24.2     A pump compartment heater fan switch w/indicator shall be located at the pump panel. |
| _____ | _____ | <b>25.   <u>PUMP MANUAL</u></b><br>25.1     Two (2) Pump Operation & Maintenance manual(s) and or CD ROM(s) shall be supplied at the time of delivery.  |
| _____ | _____ | <b>26.   <u>TANK TO PUMP CHECK VALVE</u></b><br>26.1     There shall be a check valve between the pump suction and the booster tank valve.<br>26.1.1     The check valve shall eliminate back flow into the water tank when the pump is connected to a pressurized source.  |
| _____ | _____ | <b>27.   <u>TANK TO PUMP VALVE</u></b><br>27.1     There shall be one (1) 3" full flow ball valve connected with a flexible hose from the tank to the suction side of the pump.   |
| _____ | _____ | <b>28.   <u>TANK FILL VALVE</u></b><br>28.1     There shall be one (1) 2" full-flow tank fill valve plumbed with 2" plumbing from the pump to the tank.<br>28.1.1     Installation shall be completed with 2" Class 1 rubber hose.<br>28.1.2     Stainless steel hose couplings shall be utilized.<br>28.1.3     The tank fill valve shall be controlled from the operators control panel.  |



Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>29.   <u>6" STEAMER SUCTION INLETS</u></b><br>29.1     There shall be two (2) 6" male steamer inlets, one (1) on each side of the apparatus Lincoln thread.<br>29.1.1     The suction fittings shall include a removable die cast screen to provide cathodic protection for the pump thus reducing corrosion.  |
| _____ | _____ | <b>30.   <u>SHORT STEAMER BARREL - LEFT SIDE</u></b><br>30.1     To accommodate an intake valve without exceeding the legal overall body width, a shorter steamer barrel shall be installed on the left side of the apparatus.  |
| _____ | _____ | <b>31.   <u>SHORT STEAMER BARREL - RIGHT SIDE</u></b><br>31.1     To accommodate an intake valve without exceeding the legal overall body width, a shorter steamer barrel shall be installed on the right side of the apparatus.  |
| _____ | _____ | <b>32.   <u>LEFT STEAMER INLET VALVE ( MANUAL )</u></b><br>32.1     The left steamer inlet shall be gated with a manually actuated butterfly valve.<br>32.1.1     The valve shall be located behind the side panel and shall be controlled by a hand crank.<br>32.1.2     A relief valve shall be installed to minimize water hammer.<br>32.1.3     The valve shall be installed on the left steamer inlet.   |
| _____ | _____ | <b>33.   <u>RIGHT STEAMER INLET VALVE ( MANUAL )</u></b><br>33.1     The left steamer inlet shall be gated with a manually actuated butterfly valve.<br>33.1.1     The valve shall be located behind the side panel and shall be controlled by a hand crank.<br>33.1.2     A relief valve shall be installed to minimize water hammer.<br>33.1.3     The valve shall be installed on the right steamer inlet.<br>33.2     Two (2) 6" NST chrome plated Southpark LHC26P14AC long handle steamer cap(s) shall be provided.   |
| _____ | _____ | <b>34.   <u>GATED SUCTION INLETS</u></b><br>34.1     All suction valves, unless otherwise noted in the specifications, shall be Akron 8800 series brass, quarter-turn, full flow, swing-out type.<br>34.1.1     Each valve shall be designed in such a manner that the action of water against the regulating element shall not affect its position.<br>34.2     Each valve shall be individually attached to the manifold of the pump with stainless steel pipe.<br>34.2.1     The plumbing to the valve shall contain a minimum of elbows to keep friction loss to a minimum.<br>34.3     The valves located in the pump compartment area shall be partially recessed behind the panel with the portion of the valve that contains water protected from the elements. |
| _____ | _____ | <b>35.   <u>INTAKE DRAINS</u></b><br>35.1     Each gated intake shall be equipped with a Class1 3/4" quarter turn bleeder valve.<br>35.1.1     The bleeder valve shall be equipped with a chrome plated handle to provide a positive grip while personnel are wearing gloves.   |
| _____ | _____ | <b>36.   <u>INTAKE TRIMPLATES</u></b><br>36.1     Each gated intake shall have a polished cast aluminum trimplate around the intake valve and fitting.<br>36.1.1     The trimplate shall be easily removable without the need to disturb the valve.   |
| _____ | _____ | <b>37.   <u>SLOW CLOSE MECHANISMS</u></b><br>37.1     Gated intakes that are 3" or larger shall be equipped with a mechanism to prevent changing the position of the valve from full open to full close, or vice-versa, in less than 3 seconds.   |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- \_\_\_\_\_ 38. **INTAKE STRAINERS**  
38.1 Removable strainers shall be provided with each gated intake.
- \_\_\_\_\_ 39. **RIGHT SIDE 2-1/2" GATED INTAKE(S)**  
39.1 There shall be one (1) 2-1/2" gated intake(s) provided on the right side of the pump compartment.  
39.1.1 The intake shall be furnished with a 2-1/2" Akron valve and 2-1/2" plumbing.  
39.1.2 The intake shall terminate with a 2-1/2" Lincoln thread female chrome swivel.  
39.1.3 A 2-1/2" chrome plated plug shall be supplied and attached to the bezel by means of a chain.  
39.2 The valves located in the pump compartment area shall be partially recessed behind the panel with the portion of the valve that contains water protected from the elements.
- \_\_\_\_\_ 40. **BOOSTER REEL**  
40.1 There shall be one (1) Hannay steel fabricated electric booster reel, with a capacity of 200' of booster hose.  
40.2 The reel shall have a 1-1/2" quarter turn ball valve controlled from operator's panel and piping connected with 1-1/2" flexible hose.  
40.3 An automatic brake and an auxiliary manual rewind crank shall be supplied.  
40.4 The reel shall be located front of the hosebed, right side.  
40.4.1 Installation of the booster reel shall not affect the pump compartment size, wheel base length, or body compartment size.
- \_\_\_\_\_ 41. **RED BOOSTER REEL**  
41.1 One (1) booster reel(s) shall be ordered from the reel manufacturer painted standard red and shall not be repainted to match the apparatus body.
- \_\_\_\_\_ 42. **BOOSTER REEL GUIDE ROLLERS**  
42.1 The booster reel shall be equipped with two (2) set(s) of hose guide rollers.
- \_\_\_\_\_ 43. **BOOSTER HOSE**  
43.1 One (1) 200' x 1" section(s) of booster hose coupled with 1" NST pyrolite couplings shall be supplied.
- \_\_\_\_\_ 44. **BOOSTER REEL REWIND BUTTON(S)**  
44.1 There shall be two (2) rubber covered push button switches installed for the rewind control of the booster reel.  
44.2 The switches shall be located One (1) Left pump panel One (1) Right Pump panel.
- \_\_\_\_\_ 45. **CROSSLAY PRECONNECT HOSE BED**  
45.1 Crosslay preconnects shall have 90 degree elbow type swivel on discharge outlets.  
45.2 There shall be fiberglass Dura-Dek flooring installed under the crosslay hose beds for ventilation and drainage.  
45.3 The divider(s) between the hosebed areas shall be fabricated of 3/16" aluminum.  
45.3.1 It shall be mounted in a channel on each end for adjustability.  
45.4 There shall be two (2), 1-1/2" crosslays above the side mount control panel toward the front of the body  
45.5 The crosslays shall be plumbed with 2" valves and piping.  
45.6 Each crosslay shall have a capacity for 300' of 1-3/4" hose.
- \_\_\_\_\_ 46. **CROSSLAY ROLLERS**  
46.1 Stainless steel rollers shall be provided at each end of the crosslay hose bed to facilitate deployment of hose.  
46.1.1 Vertical rollers shall be installed on each side of the hosebed opening, and a horizontal roller shall be installed under the opening.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>47.   <u>PUMP DISCHARGES</u></b>  |
|       |       | 47.1   All discharge valves, unless otherwise noted in the specifications, shall be Akron 8800 series, quarter-turn, full flow, swing-out type.  |
|       |       | 47.2   The flow regulating element of each valve shall not change its position under any condition of operation involving discharge pressures to the maximum pressure of the pump.                     |
| _____ | _____ | <b>48.   <u>STAINLESS STEEL PLUMBING</u></b>   |
|       |       | 48.1   Each valve shall be individually attached to the manifold of the pump with stainless steel pipe.  |
|       |       | 48.2   The plumbing to the valve shall contain a minimum of elbows to keep friction loss to a minimum.   |
|       |       | 48.3   The use of high pressure hose will be used in as many places as practical.  |
| _____ | _____ | <b>49.   <u>DRAIN VALVES</u></b>   |
|       |       | 49.1   Each discharge 2-1/2" or larger, with the exception of the crosslays and hard to access plumbing, shall be equipped with a 3/4" quarter turn Class 1 drain between the valve and the discharge. |
|       |       | 49.1.1   A chrome plated handle shall be provided on each drain valve to facilitate use with a gloved hand.  |
|       |       | 49.2   Drain valves shall be located in a row just above the running board and below the pump panel on each side of the apparatus pump compartment.  |
|       |       | 49.2.1   Each drain valve shall be color coded to match the appropriate line it is connected to.   |
|       |       | 49.2.2   The drain valves shall be connected to the individual valves with flexible hose that is routed in such a manner as to assure complete drainage.   |
|       |       | 49.2.3   Discharge from the drain valves shall be routed to below the apparatus.   |
| _____ | _____ | <b>50.   <u>AUTOMATIC DRAINS</u></b>   |
|       |       | 50.1   Crosslay and hard to access discharges shall be equipped with Class1, model 34AD automatic drains.  |
|       |       | 50.1.1   These drains shall open whenever the pressure in the discharge line drops below 5 PSI.  |
|       |       | 50.1.2   The drains shall be located in areas that shall allow the entire line to drain effectively.   |
|       |       | 50.1.3   More than one drain shall be used in lines that are uneven along their length.  |
|       |       | 50.2   Where the drain valve is located above the frame rails of the chassis, the outlets shall be extended with hoses to below the chassis frame rails without rubbing.                               |
| _____ | _____ | <b>51.   <u>DISCHARGE ELBOWS</u></b>   |
|       |       | 51.1   All discharges that are 2" or larger and are 42" or more above grade shall be equipped with a downward pointing elbow of 30 degrees or more with Lincoln Fire thread.                           |
| _____ | _____ | <b>52.   <u>DISCHARGE CAPS</u></b>   |
|       |       | 52.1   All discharges, not designated as a preconnect, shall have a chrome cap.  |
|       |       | 52.1.1   Caps for discharges 3-1/2" and smaller shall be secured to the apparatus with suitable chains.  |
| _____ | _____ | <b>53.   <u>DISCHARGE TRIMPLATES</u></b>   |
|       |       | 53.1   Each gated discharge shall have a polished cast aluminum trimplate around the discharge valve and fitting.  |
|       |       | 53.1.1   The trimplate shall be easily removable without the need to disturb the valve.  |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>54.   <u>VALVE CONTROLS</u></b><br>54.1   All 2 ½ " or smaller valves shall be controlled by a quarter turn locking type push/pull control with direct linkages and universal yokes.<br>54.2   Control rods shall be galvanized and have chrome guides through the panel.  |
| _____ | _____ | <b>55.   <u>FRONT BUMPER 1-1/2" DISCHARGE</u></b><br>55.1   There shall be one (1) 1-1/2" NST discharge with swivel installed in the front hosewell of the apparatus.<br>55.1.1   The hosewell must be able to hold 200' of 1 3/4' hose.<br>55.1.2   The discharge shall be plumbed with a 2" Akron valve and 2" plumbing. Class1 high pressure flex hose with stainless steel couplings shall be used in the plumbing of this discharge.<br>55.1.3   An air blow out valve shall be installed between the chassis air reservoir and the front jump line. |
| _____ | _____ | <b>56.   <u>LEFT SIDE 2-1/2" DISCHARGES</u></b><br>56.1   There shall be two (2) 2-1/2" NST discharge(s) on the left side of the pump compartment.<br>56.1.1   The discharge shall be plumbed with a 2-1/2" Akron valve and 2-1/2" plumbing.  |
| _____ | _____ | <b>57.   <u>DISCHARGE ADAPTER(S)</u></b><br>57.1   There shall be two (2) 2-1/2" NST x 2-1/2" custom Lincoln Fire thread chrome adapter(s) provided.  |
| _____ | _____ | <b>58.   <u>RIGHT SIDE 2-1/2" DISCHARGES</u></b><br>58.1   There shall be one (1) 2-1/2" NST discharge(s) on the right side of the pump compartment.<br>58.1.1   The discharge shall be plumbed with a 2-1/2" Akron valve and 2-1/2" plumbing.  |
| _____ | _____ | <b>59.   <u>DISCHARGE ADAPTER(S)</u></b><br>59.1   There shall be one (1) 2-1/2" NST x 2-1/2" custom Lincoln Fire thread chrome adapter(s) provided.  |
| _____ | _____ | <b>60.   <u>RIGHT REAR 2-1/2" DISCHARGES</u></b><br>60.1   There shall be one (1) 2-1/2" NST discharge(s) located at the right rear of the apparatus.<br>60.1.1   The discharge shall be plumbed with a 2-1/2" Akron valve and 2-1/2" plumbing.   |
| _____ | _____ | <b>61.   <u>LEFT REAR 2-1/2" DISCHARGES</u></b><br>61.1   There shall be one (1) 2-1/2" NST discharge(s) located at the left rear of the apparatus.<br>61.1.1   The discharge shall be plumbed with a 2-1/2" Akron valve and 2-1/2" plumbing.   |
| _____ | _____ | <b>62.   <u>DISCHARGE ADAPTER(S)</u></b><br>62.1   There shall be two (2) 2-1/2" NST x 2-1/2" Custom Lincoln Fire thread chrome adapter(s) provided.  |
| _____ | _____ | <b>63.   <u>RIGHT SIDE 3-1/2" DISCHARGES</u></b><br>63.1   There shall be one (1), 3-1/2" NST large diameter hose discharge(s) located on the right side pump panel.<br>63.1.1   The discharge shall be plumbed with a 3-1/2" Akron valve and 4" plumbing.<br>63.1.2   Discharge Adapters 3 ½" NST x 5" Storz with 5" Storz cap   |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>64. <u>AKRON SLO CLOZ MECHANISMS</u></b></p> <p>64.1 The discharge shall be equipped with an Akron Slo Cloz to prevent changing the position of the valve from full open to full close, or vice-versa, in less than 3 seconds as required by NFPA.</p>  |
| _____ | _____ | <p><b>65. <u>AKRON 3096 FOAM EDUCTORS - PER NFPA 1901</u></b></p> <p>65.1 There shall be two (2) Akron Style 3096, built-in bypass type foam eductor rated at 95 gallons per minute, installed on the apparatus.</p> <p>65.1.1 One eductor shall be located on crosslay #1 and the second eductor shall be located on the front trashline.</p> <p>65.1.2 There shall be a single selector valve located between the two eductors and the two foam tanks.</p> <p>65.1.3 The selector valve shall enable both eductors to flow either both Class A foam or Class B foam.</p> <p>65.2 The metering valve shall be located on the operator's control panel and shall be labeled with a stainless steel instruction plate.</p> <p>65.2.1 The metering valve shall have positive 1/4, 1/2, 1, 3 &amp; 6 percent settings.</p> <p>65.2.2 A check valve shall be installed in the foam pick-up assembly to prevent back flow of water from diluting the foam concentrate.</p> |
| _____ | _____ | <p><b>66. <u>FOAM TANK SELECTOR VALVE</u></b></p> <p>66.1 There shall be a manually operated dual tank selector valve with a flush position located on the pump operator panel.</p> <p>66.2 The selector valve will be used to select between the two different foam reservoirs.</p> <p>66.3 The selector valve shall enable both foam eductors to flow either Class A foam or Class B foam at the same time.</p>   |
| _____ | _____ | <p><b>67. <u>POLYPROPYLENE FOAM CELL</u></b></p> <p>67.1 There shall be two (2) 20 gallon polypropylene foam cell(s) incorporated into the polypropylene water tank.</p> <p>67.2 There shall be one (1) pressure/vacuum vent installed on the foam tank.</p> <p>67.3 There shall be one (1) drain hose connected to the foam cell.</p> <p>67.3.1 The drain shall have a 1/4 turn valve installed inside the pump house and it shall drain below the frame rail of the chassis.</p>  |
| _____ | _____ | <p><b>68. <u>DELUGE MONITOR RISER</u></b></p> <p>68.1 The riser pipe shall be installed to the left side of the pump module with a 3" valve, controlled from the pump panel</p> <p>68.2 The discharge valve shall be controlled by an Elkhart RC-10 slow closing remote linear output screw type actuator.</p> <p>68.3 The handwheel shall be constructed of 5" cast aluminum</p> <p>68.4 There shall be a valve status indicator module on the pump panel</p> <p>68.5 The status indicator shall have a lighted indication of the valve position, with red meaning the valve is fully closed, and green meaning the valve is fully open, and yellow meaning the valve is in a gated position.</p>  |
| _____ | _____ | <p><b>69. <u>TASK FORCE TIPS EXTENDA-GUN FOR DECKGUN</u></b></p> <p>69.1 There shall be a Task Force Tips model XG Extend-A-Gun, part number XG18PL-PL installed on the deck gun plumbing.</p> <p>69.2 The Extend-A-Gun shall provide greater clearance of apparatus lights, equipment and personnel.</p> <p>69.3 It shall be operable in either the raised or lowered position and shall provide a full 360 degree rotation.</p> <p>69.4 The extension shall be wired to the compartment open door circuitry to warn if left in the extended position.</p>   |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- \_\_\_\_\_ 70. **AKRON APOLLO 3423 DELUGE MONITOR**
- 70.1 There shall be One (1) demountable Akron Apollo style 3423 deluge monitor provided.
- 70.1.1 The monitor shall allow for 360 degrees of rotation and be able to move 90 degrees above and 15 degrees below the horizontal.
- 70.1.2 The monitor shall be complete with one (1) style 2499 stacked tips, one (1) style 3488 stream shaper, and a portable siamese ground base with two (2) 2-1/2" swivels.
- 70.2 The color of the monitor shall remain the same as the monitor manufacturer's standard color.
- \_\_\_\_\_ 71. **AKRON 1747 NOZZLE 1000 GPM**
- 71.1 An Akron Akromatic Master Stream Nozzle model 5060 shall be provided.
- 71.1.1 The nozzle shall be designed for a single fixed flow, with a spring loaded baffle for quicker flow selection with a simple turn of the baffle head.
- 71.1.2 The nozzle shall be designed for flows of 250-1250 gpm.
- 71.1.3 The nozzle shall be rated at an operating pressure of 80 psi.
- \_\_\_\_\_ 72. **WATER TANK**
- 72.1 The water tank shall have a capacity of 500 U.S. Gallons.
- 72.1.1 Certification of the tank capacity shall be recorded on the manufacturer's record of construction and shall be provided to the City upon delivery of the apparatus.
- 72.1.2 The UPF Poly-Tank ® IIE shall be constructed of ½" thick PT2E™ polypropylene sheet stock.
- 72.1.2.1 This material shall be a noncorrosive stress relieved thermoplastic, natural in color, and U.V. stabilized for maximum protection or equivalent.
- \_\_\_\_\_ 73. **BOOSTER TANK**
- 73.1 The booster tank shall be of a specific configuration and shall be so designed to be completely independent of the body and compartments.
- 73.1.1 All joints and seams shall be nitrogen welded and tested for maximum strength and integrity.
- 73.1.2 The top of the booster tank shall be fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removability.
- \_\_\_\_\_ 74. **TANK BAFFLES**
- 74.1 The transverse swash partitions shall be manufactured of 3/8" PT2E™ polypropylene (natural in color) and extend from approximately 4" off the floor to just under the cover.
- 74.1.1 The longitudinal swash partitions shall be constructed of 3/8" PT2E polypropylene (natural in color) and extend to the floor of the tank through the cover to allow for positive welding and maximum integrity.
- 74.1.2 All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments.
- 74.1.3 The partitions shall be designed to provide maximum water flow.
- 74.1.4 All swash partitions shall interlock with one another and be welded to each other as well as to the walls of the tank.
- \_\_\_\_\_ 75. **TANK SUMP**
- 75.1 There shall be one (1) sump in the bottom of the water tank.
- 75.1.1 The sump shall be constructed of ½" polypropylene and shall be located in the left front quarter of the tank.
- 75.2 On all tanks that require a front suction, a 4" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location.
- 75.2.1 The sump shall be used as a combination clean-out and drain.
- 75.3 All tanks shall have an anti-swirl plate located approximately 2" above the sump to pre-vent air from being entrained in the water while pumping.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- \_\_\_\_\_ 76. **TANK FILL CONNECTION**  
76.1 All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and shall be capable of withstanding sustained fill rates of up to 1,000 GPM.
- \_\_\_\_\_ 77. **TANK LID**  
77.1 The tank lid shall be constructed of ½" thick PT2E™ polypropylene to incorporate a multi three-piece locking design which allows for individual removal and inspection if necessary.  
77.2 The tank lid shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity.  
77.3 Each one of the lids shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart.  
77.3.1 These dowels shall extend through the covers and shall assist in keeping the covers rigid under fast filling conditions.  
77.4 A minimum of two lifting dowels shall be drilled and tapped ½" x 13" to accommodate the lifting eyes.
- \_\_\_\_\_ 78. **TANK MOUNTING**  
78.1 The UPF Poly-Tank IIE shall rest on the body cross members in conjunction with such additional cross members, as required by the tank manufacturer.  
78.2 The tank shall be isolated from the cross members through the use of hard rubber strips with, a minimum Rockwell Hardness of 60 durometer.  
78.2.1 Additionally, the tank shall be supported around the entire perimeter and captured both front and rear as well as side to side to prevent the tank from shifting during vehicle operation.  
78.3 Although the tank shall be designed on a free floating suspension principle, it shall be required that the tank have adequate hold down restraints to minimize movement during vehicle operation.  
78.4 The tank shall be completely removable without disturbing or dismantling the apparatus structure.
- \_\_\_\_\_ 79. **WATER TANK FILL TOWER**  
79.1 The tank shall have a combination vent and manual fill tower, marked "Water Fill."  
79.2 The fill tower shall be constructed of ½" PT2E polypropylene and shall be a minimum dimension of 8" x 8" at the outer perimeter.  
79.3 The tower shall be located in the left front corner of the tank.  
79.4 The tower shall have a 1/4" thick removable polypropylene screen and a PT2E polypropylene hinged-type cover.
- \_\_\_\_\_ 80. **UPF TANK OVERFLOW**  
80.1 The tank shall be equipped with a minimum of a 4" schedule 40 polypropylene overflow / air vent pipe.  
80.1.1 The pipe shall be installed in the fill tower and extend through the tank and dump to the rear of the rear axle.
- \_\_\_\_\_ 81. **CRADLE FOR WATER TANK MOUNTING**  
81.1 The tank mounting shall be a simple style cradle.  
81.1.1 This cradle shall be designed for the specific tank, and shall provide support in the areas and locations specified by the tank manufacturer.  
81.1.2 After fabrication the cradle shall be treated for maximum protection against corrosion.  
81.2 The tank cradle shall have a lifetime warranty.
- \_\_\_\_\_ 82. **TANK DRAIN VALVE**  
82.1 One (1) 1-1/2" tank drain valve(s) shall be provided under the tank sump.  
82.1.1 The valve shall have a locking lever to prevent accidental draining of the tank.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>83.   <u>TANKVISION "CLASS A" FOAM TANK GAUGE</u></b></p> <p>83.1   The level gauge shall have 9 super bright LEDs to show the tank volume.</p> <p>83.1.1   The display shall use a 2 dimensional 2-element lens to refract the light from the LEDs to provide full 180° visibility for the level indication.</p> <p>83.1.2   The gauge shall use a pressure transducer installed near the bottom of the foam tank to determine the correct volume in the tank.</p> <p>83.1.3   The gauge shall be self-calibrating by filling the tank at a steady flow rate.</p> <p>83.1.4   Self-diagnostics capabilities shall be standard on all gauges.</p> <p>83.1.5   The gauge shall start to flash when the tank volume is at ¼ tank or less and use down scrolling LEDs to alert the pump operator when the tank is almost empty.</p> |
| _____ | _____ | <p><b>84.   <u>TANKVISION "CLASS B" FOAM TANK GAUGE</u></b></p> <p>84.1   The level gauge shall have 9 super bright LEDs to show the tank volume.</p> <p>84.1.1   The display shall use a 2 dimensional 2-element lens to refract the light from the LEDs to provide full 180° visibility for the level indication.</p> <p>84.1.2   The gauge shall use a pressure transducer installed near the bottom of the foam tank to determine the correct volume in the tank.</p> <p>84.1.3   The gauge shall be self-calibrating by filling the tank at a steady flow rate.</p> <p>84.1.4   Self-diagnostics capabilities shall be standard on all gauges.</p> <p>84.1.5   The gauge shall start to flash when the tank volume is at ¼ tank or less and use down scrolling LEDs to alert the pump operator when the tank is almost empty.</p> |
| _____ | _____ | <p><b>85.   <u>TANKVISION WATER TANK GAUGE</u></b></p> <p>85.1   The level gauge shall have 9 super bright LEDs to show the tank volume.</p> <p>85.1.1   The display shall use a 2 dimensional 2-element lens to refract the light from the LEDs to provide full 180 degree visibility for the level indication.</p> <p>85.1.2   The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank.</p> <p>85.1.3   The gauge shall be self-calibrating by filling the tank at a steady flow rate.</p> <p>85.1.4   Self-diagnostics capabilities shall be standard on all gauges.</p> <p>85.1.5   The gauge shall start to flash when the tank volume is at ¼ tank or less and use down scrolling LEDs to alert the pump operator when the tank is almost empty.</p>   |
| _____ | _____ | <p><b>86.   <u>CONTROL PANEL</u></b></p> <p>86.1   The left side of the pump enclosure shall consist of two sections</p> <p>86.1.1   The lower section shall be where all valve controls, primer controls, discharge relief valve controls and mechanical controls are located.</p> <p>86.1.2   This section of the pump shall be referred to as the "control panel"</p> <p>86.2   All valves shall be self locking type, activated by a lever control that is connected to the valve with a direct linkage utilizing friction locking bell cranks and universal ball swivels</p> <p>86.2.1   The valve handles shall have color coded tags to indicate the purpose of each control.</p>   |
| _____ | _____ | <p><b>87.   <u>INSTRUMENT PANEL</u></b></p> <p>87.1   The area above the control panel shall contain all instruments, gauges, test fittings, and optional controls.</p> <p>87.1.1   This surface shall be referred to as the "instrument panel".</p> <p>87.1.2   The instrument panel shall be independent and hinged and latched so that it may be opened.</p> <p>87.1.3   All instruments, gauges, and other equipment shall be installed with sufficient slack in any cabling, tubing, or plumbing to allow the panel to swivel to the fully open position.</p>   |



Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>88. <u>COLOR CODED LABELS</u></b></p> <p>88.1 To improve identification of discharges and intakes, color coded tags shall be provided.</p> <p>88.1.1 The tags shall utilize an etching process to provide easy visibility and improved field service life.</p> <p>88.1.2 Tags shall be affixed using an industrial grade adhesive backing, eliminating the need for pop rivets or screws into the panel or control handle.</p>  |
| _____ | _____ | <p><b>89. <u>RIGHT SIDE PUMP PANEL</u></b></p> <p>89.1 A panel shall be installed on the right side of the pump for enclosure, where the right side discharges, inlets, steamers, and other pump associated equipment are located..</p> <p>89.1.1 This shall be referred to as the "right pump panel"</p> <p>89.1.2 Panel shall be easily removable and held in place with quick release push latches.</p> <p>89.1.3 Shall be fully removable for pump and plumbing access without the need to use hand tools.</p> <p>89.1.4 Any electrical equipment that may be installed shall be equipped with connectors extended to the front so they may be easily separated from the opening created when the access panel is removed.</p> <p>89.2 There shall be a NFPA compliant step standing area installed above pump panel/s</p> <p>89.3 Step shall be full width or pump panel</p> |
| _____ | _____ | <p><b>90. <u>PUMP PANEL LIGHTS</u></b></p> <p>90.1 The pump operator's control panel and the side pump panels shall each be illuminated by a ROM strip lighting.</p> <p>90.2 The pump panel lights shall become energized upon setting the parking brake so the gauge information provided may be consulted at any time the apparatus is parked.</p> <p>90.3 A stainless steel shield shall be installed over the pump panel lights to further protect them from the elements and to act as a reflector for additional illumination.</p>  |
| _____ | _____ | <p><b>91. <u>PANEL SURFACES</u></b></p> <p>91.1 The control panel, instrument panel, and both side panels shall be coated with black thermoplastic material for maximum resistance to abrasion and to minimize glare.</p> <p>91.1.1 The material shall be capable of withstanding the effects of extreme temperatures and weather.</p>  |
| _____ | _____ | <p><b>92. <u>PRESSURE / VACUUM TEST PORTS</u></b></p> <p>92.1 Class1 model 102089 pressure and vacuum test ports shall be provided on the pump panel.</p>   |
| _____ | _____ | <p><b>93. <u>PUMP COOLER VALVE</u></b></p> <p>93.1 Class1 model 34BV pump cooling control valve shall be provided on the pump panel.</p>  |
| _____ | _____ | <p><b>94. <u>ENGINE COOLER VALVE</u></b></p> <p>94.1 Class1 model 34BV engine cooling control valve shall be provided on the pump panel.</p>  |
| _____ | _____ | <p><b>95. <u>THROTTLE CONTROL</u></b></p> <p>95.1 A superior quality, vernier type hand throttle shall be installed on the pump control panel to regulate the fuel supply to the engine driving the fire pump.</p> <p>95.1.1 The throttle shall be equipped with a positive locking, quick-release center.</p>  |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- \_\_\_\_\_ 96. **CLASS 1 PRESSURE GAUGES**  
 96.1 There shall be six (6) Class1 individual pressure gauges installed on the pump panel.  
 96.1.1 Each gauge shall be Interlube filled to insure proper operations to minus 40 degrees.  
 96.1.2 Each gauge shall read 0-400 PSI and shall be a minimum of 2-1/2" in diameter.
- \_\_\_\_\_ 97. **CLASS 1 INSTRUMENT PANEL MASTER PUMP GAUGES**  
 97.1 The pump vacuum and pressure gauges shall be supplied by Class1.  
 97.1.1 Each gauge shall be Interlube filled to insure proper operations to minus 40 degrees.  
 97.1.2 Each gauge shall read -30-0-400 PSI and shall be a minimum of 4-1/2" in diameter.
- \_\_\_\_\_ 98. **WHITE FACE / BLACK NUMERAL GAUGE DISPLAY**  
 98.1 The master pump gauges and individual pressure gauges shall have a white face with black numbers and lettering.  
 98.1.1 This shall provide a high contrast and allow the gauges to be easily read by the operator.
- \_\_\_\_\_ 99. **CLASS 1 ENFO III**  
 99.1 There shall be a **Class1 ENFO III** Engine Information Display installed on the pump operators panel.  
 99.2 The **ENFO III** shall provide engine RPM, system voltage display and alarm, engine oil pressure display and alarm, and engine temperature display and alarm.  
 99.2.1 The **ENFO III** shall use the SAE J-1587 data bus for its information and shall not require any additional sensors to be mounted.
- \_\_\_\_\_ 100. **PUMP HOUR METER**  
 100.1 There shall be a pump hour meter provided and installed inside the pump compartment..  
 100.1.1 The hour meter shall be activated only when the water pump has been engaged.
- \_\_\_\_\_ 101. **DUNNAGE COMPARTMENT**  
 101.1 There shall be a dunnage compartment above the pump compartment.
- \_\_\_\_\_ 102. **INDEPENDENT PUMP COMPARTMENT**  
 102.1 The main body and the pump compartment shall be fabricated as individual units.  
 102.1.1 Both the body and pump compartment shall be fabricated using precision holding fixtures to ensure proper dimensions.  
 102.1.2 All attachment points shall be heavily reinforced.
- \_\_\_\_\_ 103. **5052-H32 ALUMINUM**  
 103.1 All body compartments shall be fabricated with a minimum of 1/8", 5052-H32, smooth aluminum plate.  
 103.1.1 The complete body shall be fabricated using break and bend techniques or by using extruded aluminum to form strong yet flexible Uni-Body structures will be acceptable.
- \_\_\_\_\_ 104. **LEFT SIDE COMPARTMENTS**  
 104.1 **COMPARTMENT L1**  
 104.1.1 There shall be a full height compartment located ahead of the rear wheel on the left side of the apparatus body.  
 104.1.1.1 This compartment shall be designated as L1 within these specifications and any ensuing paperwork or drawings after contract execution.

Meets Specs.  
Yes No

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- 104.1.1.2 The compartment shall have door opening of approx. 32 inches wide and 58 inches high.
- 104.1.1.3 The compartment shall have a usable depth of 24 inches in the lower portion and 24 inches in the upper portion.
- 104.1.1.4 It shall be equipped with a Robinson brand roll-up door.
- 104.2 COMPARTMENT L2
  - 104.2.1 A compartment shall be located above the rear wheel on the left side of the apparatus body.
    - 104.2.1.1 This compartment shall be designated as L2 within these specifications and any ensuing paperwork or drawings after contract execution.
    - 104.2.1.2 The compartment shall have a door opening of 28 inches high x 58" wide and a usable depth 24 inches.
    - 104.2.1.3 It shall be equipped with a Robinson brand roll-up door.
- 104.3 COMPARTMENT L3
  - 104.3.1 There shall be a full height compartment located behind the rear wheel on the left side of the apparatus body.
    - 104.3.1.1 This compartment shall be designated as L3 within these specifications and any ensuing paperwork or drawings after contract execution.
    - 104.3.1.2 The compartment shall have door opening of approx. 32 inches wide and 58 inches high.
    - 104.3.1.3 The compartment shall have a usable depth 24 inches in the upper portion and a transverse in the lower portion.
    - 104.3.1.4 It shall be equipped with a Robinson brand roll-up door.

\_\_\_\_ 105. **RIGHT SIDE COMPARTMENTS**

- 105.1 COMPARTMENT R1
  - 105.1.1 There shall be a full height compartment located ahead of the rear wheel on the left side of the apparatus body.
    - 105.1.1.1 This compartment shall be designated as R1 within these specifications and any ensuing paperwork or drawings after contract execution.
    - 105.1.1.2 The compartment shall have door opening of approx. 32 inches wide and 58 inches high.
    - 105.1.1.3 The compartment shall have a usable depth of 24 inches in the lower portion and 13 inches in the upper portion.
    - 105.1.1.4 It shall be equipped with a Robinson brand roll-up door.
- 105.2 COMPARTMENT R2
  - 105.2.1 There shall be an lower compartment located ahead of the rear wheel on the right side of the apparatus body.
  - 105.2.2 This compartment shall be designated as R1 within these specifications and any ensuing paperwork or drawings after contract execution.
  - 105.2.3 The compartment shall have door opening of 28 inches high and a width of 58 inches with a depth of 13 inches.
  - 105.2.4 It shall be equipped with a Robinson brand roll-up door.
- 105.3 COMPARTMENT R3
  - 105.3.1 There shall be an lower compartment located behind the rear wheel on the right side of the apparatus body.
  - 105.3.2 This compartment shall be designated as R2 within these specifications and any ensuing paperwork or drawings after contract execution.
  - 105.3.3 The compartment shall have door opening of approx. 32 inches wide and 58 inches high with an upper compartment depth of 13 inches and the lower portion shall be transverse.
  - 105.3.4 It shall be equipped with a Robinson brand roll-up door.

\_\_\_\_ 106. **TRANSVERSE REAR COMPARTMENTS**

- 106.1 The rear lower compartment shall be transverse from the left side of the body to the right side of the body.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>107.   <u>REAR COMPARTMENT</u></b><br>107.1   There shall be a full height compartment located at the rear of the apparatus body.<br>107.1.1   This compartment shall be designated as T1 within these specifications and any ensuing paperwork or drawings after contract execution.<br>107.1.2   This compartment shall have a door opening of approximately 48 wide x 24" high and shall have a usable depth of 30".<br>107.1.3   It shall be equipped with a Robinson brand roll-up door.  |
| _____ | _____ | <b>108.   <u>ROBINSON "WATER DAM" DOOR SEALS</u></b><br>108.1   Each compartment that is equipped with a Robinson rollup door shall have a "Water Dam" sill installed in the bottom of the compartment to reduce water and other liquids from entering the compartments.<br>108.1.1   The door sill shall act as a scuff plate to reduce paint damage from equipment.   |
| _____ | _____ | <b>109.   <u>SWEEP-OUT CONSTRUCTION</u></b><br>109.1   All side body compartments shall have sweep out type floors.<br>109.1.1   All compartments shall be made to the largest practical dimensions to provide maximum storage capacity for fire department equipment.  |
| _____ | _____ | <b>110.   <u>ROLL-UP DOORS ( SATIN FINISH )</u></b><br>110.1   Roll-up doors shall be ROM shutter type with 34 millimeter slats that roll onto a spool at the top of the compartment.<br>110.1.1   Each slat shall be equipped with nylon end shoes to assure operation without the need of constant lubrication.   |
| _____ | _____ | <b>111.   <u>ROBINSON ROLL UP DOOR HANDLES</u></b><br>111.1   The roll-up door shall be supplied with a full width handle for ease of opening with only one hand, allowing quick access to equipment and Nylon end shoes on every slat to assure operation without constant lubrication.  |
| _____ | _____ | <b>112.   <u>STEPS</u></b><br>112.1   All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds.<br>112.1.1   Steps shall be provided at any area that personnel may need to climb and shall be adequately lighted.<br>112.1.2   Each folding step shall have two large open slots to prevent buildup of ice or mud and to provide a handhold when necessary.<br>112.2   Steps shall be provided in the following locations:<br>112.2.1   Three (3) folding steps on the left front compartment<br>112.2.2   Three (3) folding steps on the right front compartment<br>112.2.3   Six (6) steps at the rear of the body, three (3) on each side. |
| _____ | _____ | <b>113.   <u>BACKBOARD STORAGE IN REAR TRANSVERSE COMPARTMENT</u></b><br>113.1   Brackets shall be provided on the forward wall of the rear transverse compartment for two (2) backboard(s).  |
| _____ | _____ | <b>114.   <u>PUMP COMPARTMENT HEAT PAN</u></b><br>114.1   There shall be a heat pan with a slide-in bottom panel installed beneath the pump compartment to contain the engine heat and prevent freezing of valves and plumbing in cold weather.<br>114.1.1   The lower portion of the pump compartment area shall be enclosed on all sides, front, and rear.<br>114.1.2   The slide-in panel shall be easily removable for warm weather operations.   |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>115.   <u>LEFT SIDE PUMP ACCESS DOOR</u></b>  |
|       |       | 115.1    There shall be a treadbrite door above the left hand side pump panel to allow access to the pump compartment.   |
|       |       | 115.1.1    The vertically hinged panel shall be of the single pan design and shall be positively latched in the closed position utilizing a pushbutton latch.              |
|       |       | 115.1.2    A gas strut shall be provided on the door.  |
|       |       | 115.2    This door shall be wired into the hazard warning light circuit.   |
|       |       | 115.2.1    An aluminum sill protector shall be installed on the bottom of the door opening to protect the paint from chipping and scratching.                              |
|       |       |  |
| _____ | _____ | <b>116.   <u>RIGHT SIDE PUMP ACCESS DOOR</u></b>   |
|       |       | 116.1    There shall be a treadbrite door above the right hand side pump panel to allow access to the pump compartment.  |
|       |       | 116.1.1    The vertically hinged panel shall be of the single pan design and shall be positively latched in the closed position utilizing a pushbutton latch.              |
|       |       | 116.1.2    A gas strut shall be provided on the door.  |
|       |       | 116.2    This door shall be wired into the hazard warning light circuit.   |
|       |       | 116.2.1    An aluminum sill protector shall be installed on the bottom of the door opening to protect the paint from chipping and scratching.                              |
|       |       |  |
| _____ | _____ | <b>117.   <u>PUMP ACCESS DOOR</u></b>  |
|       |       | 117. 1    There shall be a treadbrite access panel provided on the front of the pump compartment.  |
|       |       | 117.1.1    The panel shall be of the single pan design and shall be positively latched in the closed position utilizing a pushbutton latch.                                |
|       |       | 117.1.2    An aluminum sill protector shall be installed on the bottom of the door opening to protect the paint from chipping and scratching.                              |
|       |       |  |
| _____ | _____ | <b>118.   <u>COMPARTMENT VENTING</u></b>   |
|       |       | 118.1    Each body compartment shall be properly vented in a manner that will reduce the amount of dirt and water that may enter the compartment.                          |
|       |       | 118.1.1    Venting shall be directly to the atmosphere rather than into another compartment which would only spread moisture throughout the body rather than dissipate it. |
|       |       | 118.2    Additionally, each compartment shall be equipped with drain holes to allow standing water to exit.  |
|       |       |  |
|       |       | <b>119.   <u>LEFT BLANK INTENTIONALLY</u></b>  |
|       |       |  |
|       |       | <b>120.   <u>LEFT BLANK INTENTIONALLY</u></b>  |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

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|-------|-------|--|
| _____ | _____ | <p><b>121. <u>RUNNING BOARD HOSE COMPARTMENT - LEFT</u></b></p> <p>121.1 There shall be soft suction hose compartment recessed in the running board on the left side.</p> <p>121.1.1 The floor of this compartment shall be covered with Dri-Dek flooring.</p> <p>121.2 There shall be an aluminum treadbrite cover installed on the running board hose compartment.</p> <p>121.2.1 The lid shall be equipped with a hinge on the back side.</p> <p>121.2.2 A gas strut shall be provided to hold the lid in the open position.</p>  |
| _____ | _____ | <p><b>122. <u>RUNNING BOARD HOSE COMPARTMENT - RIGHT</u></b></p> <p>122.1 There shall be soft suction hose compartment recessed in the running board on the right side.</p> <p>122.1.1 The floor of this compartment shall be covered with Dri-Dek flooring.</p> <p>122.2 There shall be an aluminum treadbrite cover installed on the running board hose compartment.</p> <p>122.2.1 The lid shall be equipped with a hinge on the back side.</p> <p>122.2.2 A gas strut shall be provided to hold the lid in the open position.</p>  |
| _____ | _____ | <p><b>123. <u>STEPPING, STANDING, WALKING SURFACES</u></b></p> <p>123.1 All exterior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be constructed of Grip Strut or Textured Treadbright and shall provide a highly slip resistant surface, even when the surface is wet.</p> <p>123.1.1 All interior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be slip resistant when the surface is dry.</p> <p>123.1.2 The degree of slip resistance shall be in compliance with the intent of NFPA 1901 newest version.</p>   |
| _____ | _____ | <p><b>124. <u>TREADPLATE OVERLAYS</u></b></p> <p>124.1 Aluminum treadbrite plate overlays shall be sprayed with a clear coat sealer on back side that is pliable and resistant to scratches and chips to provide an insulating barrier between dissimilar metals when it is bolted to the body.</p> <p>124.1.1 After painting and final construction, overlays shall be additionally sealed at the edges with a silicone caulking compound.</p> <p>124.2 Overlays shall be installed that are totally insulated from the overlay with nylon shoulder washers that extend into the hole that is drilled into the aluminum.</p> <p>124.2.1 Stainless steel cap nuts shall be employed where bolts may damage equipment or cause injury.</p> <p>124.3 The following areas shall have treadplate overlays installed:</p> <p>124.3.1 Front compartment vertical areas on both sides.</p> <p>124.3.2 The top surface of all side compartments, bending over the edge and then bending out, forming a dripail.</p> <p>124.3.3 The rear surface of the body module between the rear compartment and the vertical handrail.</p> <p>124.3.4 The rear surface of the body module above the rear compartment extending in width between the hose bed risers.</p> |
| _____ | _____ | <p><b>125. <u>REAR WHEEL WELLS</u></b></p> <p>125.1 The fenders shall be fitted with bolt-in full circular smooth aluminum inner-liners in the wheel well area for ease of cleaning and maintenance.</p> <p>125.1.1 The fenders shall be fitted with bolt-in removable full circular innerliners in the wheel well area for ease of cleaning and maintenance.</p> <p>125.1.2 There shall be sufficient clearance provided in the wheel wells to allow the use of tire chains when the apparatus fully loaded.</p>  |
| _____ | _____ | <p><b>126. <u>REAR FENDERETTES</u></b></p> <p>126.1 Two (2) stainless steel fenderettes shall be installed at the outboard edge of the rear wheel well area, one on each side.</p>   |

Meets Specs.  
Yes No

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- 126.1.1 The fenderettes shall be bolted to the apparatus body using nylon washers to space them slightly away from the body to reduce build-up of road grime.
- 126.1.2 The fenderettes shall be constructed of stainless steel that has been polished to a high quality finish.

\_\_\_\_\_ 127. **BODY RUBRAILS**

- 127.1 Rubrails shall be installed to protect the body from damage should the body be brushed or rubbed against another object.
  - 127.1.1 The rubrails shall be fabricated of 1-1/2 inch x 3/8 inch bar stock.
  - 127.1.2 The bar stock shall be highly polished and then Bright Dip anodized.
- 127.2 It shall be installed, spaced away from the body utilizing 5/8 inch, noncorrosive nylon spacers and secured with aluminum bolts.
  - 127.2.1 The ends shall be angled toward the body for safety and a pleasing appearance.

\_\_\_\_\_ 128. **REAR TOW EYE**

- 128.1 One (1) rear tow eyes shall be installed directly below the rear of the chassis frame rails.
  - 128.1.1 The tow eye shall be capable of a 15,000 lb. straight pull rating.

\_\_\_\_\_ 129. **HANDRAILS**

- 129.1 Handrails shall be constructed of ribbed extruded aluminum of not less than 1-1/4" in diameter.
  - 129.1.1 All railing escutcheons and brackets shall be stainless steel or chrome plated, and shall be bolted to the body with stainless steel bolts.
  - 129.1.2 The lower bracket on all vertical handrails shall have a drain hole drilled in it at the lowest point. Handrails shall be provided in the following areas:
    - 129.1.2.1 Horizontal rear hand rail above the rear center compartment.
    - 129.1.2.2 Handrail at the top of hosebed on left rear side.
    - 129.1.2.3 Handrail at the top of hosebed on right rear side.
    - 129.1.2.4 Grab handle on top of catwalk on the left side of the apparatus in front of the tank fill tower.
    - 129.1.2.5 Grab handle on top of catwalk on the right side of the apparatus.
    - 129.1.2.6 Entrance on each side of pump compartment.
    - 129.1.2.7 Rear vertical hand rail from top of body to rear step.

\_\_\_\_\_ 130. **GROUND LADDERS**

- 130.1 The ground ladders shall be stored beneath the hose bed, to the right of the water tank.
  - 130.1.1 The ladders shall be stored vertically on their beam in an aluminum rack with poly scuff strips.
  - 130.1.2 The ladders shall be accessible through a hinged treadbrite door on the rear of the body.

\_\_\_\_\_ 131. **ALUMINUM TUBES FOR PIKE POLE STORAGE**

- 131.1 There shall be two (3) aluminum tubes for storage of pike poles installed in the upper portion of the ladder storage compartment.

\_\_\_\_\_ 132. **DRI-DEK COMPARTMENT FLOORING**

- 132.1 All compartment floors that do not have permanently mounted equipment shall be protected with Dri-Dek flooring tiles.
  - 132.1.1 The tiles shall be black with yellow angled leading edges.

\_\_\_\_\_ 133. **SHELVING CHANNELS**

- 133.1 There shall be two Strut channels installed in two (2) standard height compartment(s) for future shelves.
- 133.2 The strut channels shall be installed L2. R2.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- \_\_\_\_\_   134.   **SHELVING CHANNELS**  
134.1   There shall be two Strut channels installed in four (4) full height compartment(s) for future shelves.  
134.2   The strut channels shall be installed L1, L3, R1,R3
- \_\_\_\_\_   135.   **ADJUSTABLE SHELVES**  
135.1   There shall be eight (8) adjustable shelves.  
135.1.1   The shelves shall be constructed of 3/16" aluminum sheet with 2" lips.  
135.1.2   The shelves shall be coated with Line-X™, a thermoplastic polyurethane coating.  
135.1.3   The shelves shall be fabricated in such a manner that liquids readily drain when spilled.  
135.1.4   The floor of the shelves shall be covered with Dri-Dek flooring tiles to provide drainage and ventilation of equipment.  
135.2   Locations to be determined at pre-construction conference.
- \_\_\_\_\_   136.   **ROLL OUT EQUIPMENT TRAY(S)**  
136.1   There shall be two (2) rollout tray(s) installed on the apparatus.  
136.1.1   Each tray shall be provided with a Slidemaster™, roller type assembly.  
136.1.2   The roller assembly shall have a rated capacity of 150lb end load, 300lb distributed load, and shall have 100% extension capabilities.  
136.1.3   A mechanical lock assembly shall be provided to lock the tray in the extended position and the retracted position.  
136.1.4   The tray(s) shall be constructed of 3/16" aluminum sheet with 3" lips.  
136.1.5   The tray(s) shall have an abraded finish.  
136.2   The roll-out trays shall be installed L3, R3.
- \_\_\_\_\_   137.   **ROLL OUT EQUIPMENT TRAY(S)**  
137.1   There shall be one (1) rollout tray(s) installed on the apparatus.  
137.1.1   Each tray shall be provided with a Slidemaster™, roller type assembly.  
137.1.2   The roller assembly shall have a rated capacity of 350lb end load, 600lb distributed load, and shall have 100% extension capabilities.  
137.1.3   A mechanical lock assembly shall be provided to lock the tray in the extended position and the retracted position.  
137.1.4   The tray(s) shall be constructed of 3/16" aluminum sheet with 3" lips.  
137.1.5   The tray(s) shall have an abraded finish.  
137.2   The roll-out trays shall be installed T1.
- \_\_\_\_\_   138.   **CHANNELS MOUNTED ON REAR COMPARTMENT WALL, FOR SCBA CLIPS**  
138.1   There shall be two (2) set(s) of strut channels installed on the rear compartment wall for mounting of SCBA clips.  
138.1.1   This shall allow for full movement of the clips along the entire width of the compartment.  
138.2   The channels shall be located R2 .
- \_\_\_\_\_   139.   **HOSEBED CAPACITY**  
139.1   The hosebed shall have the capacity for 1000' of 5" and 800' of 2 ½" DJ
- \_\_\_\_\_   140.   **HOSE BED**  
140.1   The hose bed compartment shall have a minimum of 30 cubic feet of storage space in accordance with NFPA latest edition 1901.
- \_\_\_\_\_   141.   **HOSE BED FLOORING**  
141.1   The floor of the hose bed compartment shall be constructed of Dura-Dek fiber reinforced plastic material.
- \_\_\_\_\_   142.   **TANK GAUGE ACCESS**  
142.1   At the front of the flooring shall be a removable stainless steel cover to provide access to the tank gauge sending unit without the need to remove the flooring.



Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- |       |       |   |
|-------|-------|---|
| _____ | _____ | <b>143.   <u>ALUMINUM HOSE BED PARTITION(S)</u></b><br>143.1   Two (2) hose bed partition(s) shall be fabricated from 1/8" smooth aluminum plate with one inch round tubing on the top and rear edge of the partition to prevent damage to a hose bed cover.<br>143.2   The partition(s) shall be mounted on hot-dipped galvanized slide rails at the front and rear of the hose bed.<br>143.3   Where no obstruction such as a fill tower is present, the slide rails shall allow full movement of a hose partition along the width of the hose bed.<br>143.4   Additionally, there shall be less than a ½" gap between the bottom of the hose bed partition and the Dura-Dek flooring.  |
| _____ | _____ | <b>144.   <u>ABRADED 1/8" ADJUSTABLE HOSEBED DIVIDER</u></b><br>144.1   Two (2) 1/8" adjustable hosebed divider(s) shall have a maintenance free abraded finish.  |
| _____ | _____ | <b>145.   <u>12 VOLT SYSTEM SCHEMATIC</u></b><br>145.1   A complete electrical schematic for the apparatus shall be provided.<br>145.1.1   This schematic shall be specifically prepared for this individual unit rather than a generic schematic designed to accommodate all apparatus.  |
| _____ | _____ | <b>146.   <u>V-MUX "OR EQUAL" ELECTRICAL MANAGEMENT SYSTEM</u></b><br>146.1   The apparatus shall be equipped with a V-MUX Multiplex System, or equal<br>146.1.1   The Manufacture of the Multiplex system or equal system shall provide at a minimum three cities of reference that have at least 10 trucks operational for over a one year period.<br>146.1.2   The system hardware that is being put into the apparatus of this bid shall be field proven for a minimum of two years.<br>146.1.3   Any system that has less then 200 systems in vehicles with less then two years field time on the identical hardware that shall be put into the apparatus shall be excluded from this bid process.<br>146.1.4   Any system with a warranty higher then 1% over the past 2 years shall be excluded.<br>146.1.5   There are several key benefits to multiplexing, one is to reduce the number of connections in a vehicles electrical system, because of this it is important to limit the amount of modules that control certain functions of the vehicle           |
| _____ | _____ | <b>147.   <u>Outputs</u></b><br>147.1   The outputs shall perform all the following items without added modules to perform any of the tasks.<br>147.1.1 <u>Load Shedding:</u><br>147.1.1.1   The System shall have the capability to Load Shed with 8 levels any output.<br>147.1.1.2 <b>Add-on modules may be acceptable; the module with the outputs must perform all functions</b><br>147.1.1.2.1 <b>Any add on system must have been proven to work in the field with little or no problems.</b><br>147.1.2 <u>Load Sequencing:</u><br>147.1.2.1   The System shall be able to sequence from 0 8 levels any output.<br>147.1.2.2 <b>Add-on modules may be acceptable; the module with the outputs must perform all functions</b><br>147.1.2.2.1 <b>Any add on system must have been proven to work in the field with little or no problems.</b><br>147.1.3 <u>.Output Device:</u><br>147 1.3.1   The System shall have solid-state output devices.<br>147.1.3.2   Each solid-state output shall be a MOS-FET (Metal Oxide Semiconductor - Field Effect Transistors) |

Meets Specs.  
Yes No

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- 147.1.3.3 **Add-on modules may be acceptable; the module with the outputs must perform all functions**  
**147.1.3.3.1 Any add on system must have been proven to work in the field with little or no problems.**

147.1.4 Flashing Outputs:

- 147.1.4.1 The System shall be able to flash any output in either A or B phase, and logic is used to shut down needed outputs in park, or any one of several combined interlocks.  
147.1.4.2 The flash rate can be selected at either 80, or 160 FPM.  
147.1.4.3 **Add-on modules may be acceptable; the module with the outputs must perform all functions**  
**147.1.4.3.1 Any add on system must have been proven to work in the field with little or no problems.**

147.1.5 PWM:

- 147.1.5.1 The modules shall have the ability to PWM at some outputs so that a Headlight PWM module is not needed.  
147.1.5.2 **Add-on modules may be acceptable; the module with the outputs must perform all functions**  
**147.1.5.2.1 Any add on system must have been proven to work in the field with little or no problems.**

147.1.6 Diagnostics:

- 147.1.6.1 An output shall be able to detect either a short or open circuit.  
147.1.6.2 The System shall be able report in "real time" a text based message that points the maintenance person to a specific output.

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**148. Inputs:**

- 148.1 The inputs shall have the ability to switch by a ground or vbatt signal.  
148.1.1 The inputs shall be filtered for noise suppression via hardware and software so that RF or dirty power will not trick an input into changing its status.

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**149. Automatic Climate Control:**

- 149.1 The Multiplex system shall have the capability to provide automatic climate control, this shall occur by the use of PWM outputs and a Digital readout that combines other vehicle functions as well.  
149.1.1 The Climate control shall be an integral part of the Multiplex system.  
149.1.2 **Add-on modules may be acceptable; the module with the outputs must perform all functions**  
**149.1.2.1 Any add on system must have been proven to work in the field with little or no problems.**

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**150. Auto-Throttle:**

- 150.1 The Multiplex system shall be able to perform automatic high idle via a network gateway or by using an existing output on a module to provide the proper signals to an OEM Engine ECU.  
150.1.1 This task shall be handled with existing inputs and outputs.  
150.1.2 **Add-on modules may be acceptable; the module with the outputs must perform all functions**  
**150.1.2.1 Any add on system must have been proven to work in the field with little or no problems.**

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**151. Displays:**

- 151.1 Displays shall be able to provide real time information regarding Load Shedding and System Status, such as network traffic/errors or shorts and open circuits.

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**152. System Network:**

- 152.1 The Multiplex system shall contain a Peer-to-Peer network.

Meets Specs.  
Yes   No

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- \_\_\_\_\_   153.   **System Reliability:**
- 153.1   The Multiplex system shall be able to perform in extreme temperature conditions, from 40 degrees to +85 degrees C (-40degrees to +185 degrees F.)
- 153.1.1   The system shall be sealed against the environment, moisture, humidity, salt or fluids such as diesel fuel, motor oil or brake fluid.
- 153.1.2   The enclosures shall be rugged to withstand being mounted in various locations or compartments around the vehicle.
- 153.1.3   The modules shall be protected from over voltage and reverse polarity.
- \_\_\_\_\_   154.   **12 VOLT SYSTEMS TEST**
- 154.1   After completion of the unit, the 12 volt electrical system shall undergo a battery of tests as listed in the latest addition of NFPA Pamphlet 1901.
- 154.1.1   These tests shall include, but not be limited to: a reserve capacity test, alternator performance test at idle, alternator performance test at full load, and a low voltage alarm test.
- 154.1.2   Certification of the results shall be supplied with the apparatus at the time of delivery.
- \_\_\_\_\_   155.   **REAR WORK LIGHT SWITCH**
- 155.1   A switch shall be installed above the tail light bezel on the left side.
- 155.1.1   The switch shall be wired to the backup lights to provide additional work lighting.
- 155.1.2   The rear work light circuit shall be deactivated when the park brake is disengaged.
- \_\_\_\_\_   156.   **MIDSHIP TURN SIGNAL**
- 156.1   There shall be one (1) Weldon model 9185-60015Y turn signal lights installed in the rear wheel well area, on each side of the body.
- \_\_\_\_\_   157.   **CLEARANCE LIGHTS/REFLECTORS**
- 157.1   Clearance lights and clearance reflectors shall be installed on the body and/or pump module as necessary to be in full compliance with applicable ICC and DOT codes and regulations.
- \_\_\_\_\_   158.   **GROUND LIGHTING**
- 158.1   Weldon model 9185-40003 lights shall be installed beneath the apparatus in areas where personnel may be expected to climb on and off of the apparatus.
- 158.1.1   The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards.
- 158.1.2   These areas shall include, but not be limited to, cab doors, side running boards, and the rear step area.
- \_\_\_\_\_   159.   **WALKWAY LIGHTS**
- 159.1   Lights shall be mounted in a manner that illuminates all walkways and steps for safe operation of the apparatus.
- 159.1.1   These lights shall become illuminated when the parking brake is engaged.
- \_\_\_\_\_   160.   **"ROM" COMPARTMENT LIGHTING**
- 160.1   All high side compartments shall be furnished with a "ROM" compartment light mounted on the front corner of the compartment.
- 160.1.1   All compartment lights will be fully adjustable.
- 160.1.2   An automatic door switch shall activate these compartment lights .
- 160.2   All full height compartments shall be equipped with a "ROM" compartment light mounted on the front corner of the compartment.
- 160.2.1   An automatic door switch shall activate these compartment lights.

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Yes No

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- 160.3 All compartments that have a door opening larger than 42" wide shall have a "ROM" compartment light installed on the front and rear corner of the compartment.
- 160.4 Further, lighting shall be installed in any compartment or enclosed, equipment area with four cubic feet of storage capacity or greater, or any compartment with a door opening of 144 square inches or more.

\_\_\_\_\_ 161. **PUMP COMPARTMENT LIGHTS**

- 161.1 There shall be one (1) light(s) installed in the pump compartment.
- 161.1.1 The light(s) shall be activated by an automatic switch in the right side pump compartment access door and shall be located in a manner that will provide maximum lighting.

\_\_\_\_\_ 162. **TAIL LIGHTS**

- 162.1 There shall be two (2) Whelen 600 series LED tail light assemblies installed on the rear of the apparatus.
- 162.1.1 Two (2) red LED stop/tail lights, two (2) amber LED turn lights, and two (2) clear back up lights shall be supplied.
- 162.1.2 The lights shall be mounted in a cast housing, on each side of the apparatus.

\_\_\_\_\_ 163. **REAR SCENE LIGHT**

- 163.1 There shall be two (2) Federal model GHSCENE lights installed on the rear of the apparatus above the rear compartment.
- 163.1.1 The light sockets shall be adjusted to provide maximum lighting to the area at the rear of the apparatus.
- 163.1.2 This light shall be switched at the main switch panel in the chassis cab.
- 163.2 The lights shall be located rear left rear right .

\_\_\_\_\_ 164. **HOSE LOADING LIGHTS**

- 164.1 There shall be two (2) Unity AG-R deck lights mounted high at the rear of the apparatus.
- 164.1.1 These lights shall be energized by a switch located directly on the lamp heads.

\_\_\_\_\_ 165. **GOLIGHT REMOTE CONTROL SEARCH LIGHT**

- 165.1 There shall be one (1) Golight model 2020 permanent mount search light installed on the apparatus.
- 165.1.1 The light shall provide 1000,000 candle power of light output from a weather resistant halogen bulb.
- 165.1.2 The light shall be equipped with remote controls located both in the cab and on the pump panel.
- 165.2 The light shall be located on an aluminum treadbrite pedestal located on the top of the chassis roof.
- 165.2.1 The treadbrite pedestal shall be located over top of the Opticom emitter.

\_\_\_\_\_ 166. **TELESCOPING 12 VOLT LIGHT(S)**

- 166.1 There shall be two (2) Federal NightFighter 12 Volt telescoping spot/flood light(s) mounted.
- 166.2 The telescopic lights shall be installed one each side of the pump compartment.

\_\_\_\_\_ 167. **UPPER ZONE A VISUAL WARNING**

- 167.1 There shall be one (1) Federal Signal ViewPoint Split Vector model FV 2652 lightbar installed on the forward section of the chassis cab roof.
- 167.1.1 The lightbar shall be equipped with a total of eight (8) pods, four on each side.
- 167.1.2 The lightbar shall be equipped with four (4) 95 flash per minute rotators and four (4) 175 flash per minute rotators.

Meets Specs.  
Yes No

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- 167.1.3 Lens colors, from driver's side to passenger side, shall be as follows:
  - 167.1.3.1 Red, Clear, Red, Clear, Clear, Red, Clear, Red,. Each clear pod shall have a black VRI insert in the rear of the lens.
- 167.2 For load management purposes, one or more of the center rotators may be shed.
  - 167.2.1 All clear sections in the light bar shall be deactivated in the Blocking Right of Way mode.

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**168. UPPER ZONE C VISUAL WARNING**

- 168.1 There shall be two (2) Federal Signal model IVP200F rotating beacons installed high at the rear of the apparatus.
  - 168.1.1 The lights shall have red and amber lenses.

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**169. LOWER ZONE B VISUAL WARNING**

- 169.1 There shall be three (3) Whelen Engineering model 60R00F\*R LED lights with flanges installed in the lower warning zone.
  - 169.1.1 The lights shall have a red lenses.

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**170. LOWER ZONE C VISUAL WARNING**

- 170.1 There shall be two (2) Whelen Engineering model 60R00F\*R LED lights with flanges installed in the lower warning zone.
  - 170.1.1 The lights shall have a red lenses.

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**171. LOWER ZONE D VISUAL WARNING**

- 171.1 There shall be three (3) Whelen Engineering model 60R00F\*R LED lights with flanges installed in the lower warning zone.
  - 171.1.1 The lights shall have a red lenses.

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**172. OPTICOM EMITTER**

- 172.1 There shall be one (1) 3M Opticom emitter on the front of the cab.
  - 172.1.1 The emitter shall be wired in such a manner as to be disabled when the parking brake is set.
  - 172.1.2 A switch in the main switch panel shall control the unit in conjunction with the parking brake circuit.
- 172.2 Opticom to be located on the chassis roof below golight.

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**173. FEDERAL EQ2B ELECTRONIC SIREN**

- 173.1 There shall be one (1) Federal EQ2B electronic siren mounted in the front bumper.
  - 173.1.1 The EQ2B shall combine Digital Signal Processor (DSP) technology with a true 200 watts of speaker output to reproduce genuinely and accurately the distinctive sound of the Q-siren at a fraction of the current draw.
- 173.2 In addition to the recognizable "Q" sound, the EQ2B shall provide all of the functionality of an electronic siren with PA.
  - 173.2.1 The EQ2B shall be modular system comprised of a 200-watt speaker, an Amplifier/DSP, and a Digital Output Controller.
  - 173.2.2 These components work together to generate the characteristic sound of Federal's Q-siren.
  - 173.2.3 In order to deliver the "Q" sound effectively, the BP200 speaker shall produce a full 200 watts of output.
  - 173.2.4 The BP200-Q speaker shall mounts attractively within the bumper, behind Federal's classic, chrome-plated "Q" grille.
  - 173.2.5 Additional features shall include a "Q" yelp, "Q" Brake, digitally recorded Air Horn, PA, radio rebroadcast, and a detachable push-to-talk microphone with volume control.

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**174. FEDERAL SIGNAL TRAFFIC ADVISOR**

- 174.1 There shall be one (1) Federal Signal SML8 Traffic Advisor installed on the apparatus.
  - 174.1.1 The traffic advisor shall be recess mounted on the rear of the body above the rear compartment.

Meets Specs.  
Yes No

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174.1.2 A deluxe controller shall be supplied and installed in the cab to control the traffic advisor.

\_\_\_\_ 175. **THERMOPLASTIC COATING**

- 175.1 In the designated areas, Line-X™, a two component spray-in-place thermoplastic polyurethane system shall be used for maximum protection of the body and equipment.
- 175.2 The density of the material shall be a minimum of 70 PCF as measured using ASTM test method D-1622.
- 175.3 The taber abrasion resistance shall be a minimum of 0.03% per 1000 cycles as measured utilizing ASTM test method D-4060.
- 175.4 The minimum tensile strength as measured using ASTM D-2370 shall be 1540 pounds per square inch.

\_\_\_\_ 176. **BODY COMPARTMENTATION COATING**

- 176.1 The interior of the body compartments shall be coated with a gray thermo-plastic polyurethane coating.

\_\_\_\_ 177. **BODY PAINT PREPARATION**

- 177.1 After the body and components have been fabricated and assembled they shall then be disassembled prior to painting so when the apparatus is completed there shall be finish paint beneath the removable components.
- 177.1.1 The body shall be totally removed from the chassis during the painting process to insure the entire unit is covered.
- 177.1.2 The apparatus body and components shall be metal finished as follows to provide a superior substrate for painting.
- 177.2 All aluminum sections of the body shall undergo a thorough cleaning process starting with a phosphoric acid solution to begin the etching process followed by a complete rinse.
- 177.2.1 The next step shall consist of a chemical conversion coating applied to seal the metal substrate and become part of the aluminum surface for greater film adhesion.
- 177.3 After the cleaning process the body and its components shall be primed with an epoxy primer and the seams shall be caulked.
- 177.4 All bright metal fittings, if unavailable in stainless steel or polished aluminum, shall be heavily chrome plated.
- 177.4.1 Iron fittings shall be copper underplated prior to chrome plating.

\_\_\_\_ 178. **PAINT PROCESS**

- 178.1 The paint process shall follow the strict standards as set forth by PPG Fleet Finish Guidelines.
- 178.2 The body shall go through a three-stage paint process: Primer Coat, Base Coat (Color), and Clear Coat. In the first stage of the paint process the body shall be coated with PPG DPHS-52 Low VOC / High Solids epoxy primer to achieve a total thickness of 2-4 mills.
- 178.2.1 In the second stage of the paint process the body shall be painted with PPG DBHS Delta Base Coat (color as per customer specifications).
- 178.2.2 A minimum of two to three coats of paint shall be applied to achieve hiding. In the final stage of the paint process the body shall be painted with PPG DCU-2002 Clear Coat.
- 178.2.3 A minimum of two to three coats shall be applied to achieve a total dry film thickness of 2-3 mills.
- 178.3 As part of the curing process the painted body shall go through a baking process. The painted components shall be baked at 185 degrees for 3 hours to achieve a complete coating cure on the finished product.
- 178.4 After bake and ample cool down time, the coated surface shall be sanded using 3M 1000, 1200, and or 1500 grit sandpaper to remove surface defects.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- 178.5 In the final step, the surface shall be buffed with 3m Superduty compound to add extra shine to coated surface.  
178.5.1 No more than .5 mil of clear shall be removed in this process

\_\_\_\_ 179. **APPARATUS BODY COLOR**

- 179.1 The apparatus shall be painted with PPG polyurethane enamel paint or equivalent.  
179.2 The apparatus shall be painted ( RED ) PPG# DBHS - 73841.  
179.3 The roof of the cab and down to the bottom of the windows shall be painted white. White PPG# 8000: Soft White  
179.4 Lincoln Fire Rescue lettering to be both sides of cab behind front door in Gold.  
179.5 5/8" Gold stripe over cab paint break with black outline.  
179.6 There shall be gold reflective lettering, outlined by reflective black 5/16" stripe  
179.6.1 There shall be 8 letters, 4 ½" high, stating the word "engine" and its respective number, up to double digits, installed on the front cab below the windshield.  
179.6.2 There shall be 8 letters 8 3/4" high starting "engine" and it's respective number, up to double digits. Installed on Drivers and Officers door.

\_\_\_\_ 180. **TOUCH UP PAINT**

- 180.1 One (1) four ounce bottle of acrylic enamel touch-up paint shall be supplied.

\_\_\_\_ 181. **NFPA COMPLIANT REFLECTIVE STRIPING**

- 181.1 Reflective striping shall be applied to the exterior of the apparatus in a manner consistent with the National Fire Protection Association Pamphlet 1901, latest edition.  
181.1.1 It shall consist of a 4" wide stripe low across the front of the chassis and along the sides (both left and right) then go up at a 45 degree angle up and back to a point above the wheel well area where it will run level to the back of the body and continue across the rear of body joining both sides.  
181.1.2 The reflective striping shall be white in color with a 5/16 black outline stripe.

\_\_\_\_ 182. **UNDERCOATING**

- 182.1 The apparatus shall undergo a two (2) step undercoating process.  
182.1.1 The first step shall be a rubberized polyurethane base compound that is applied after the body has been primed.  
182.1.2 This coat shall be applied to all hidden pockets and surfaces that shall not be visible after completion.  
182.2 As a final step, the entire underside of the body shall be coated with a bituminous based automotive type undercoating when the apparatus is completed.  
182.2.1 During this application, special care shall be taken to avoid spraying the product on air lines, cables, or other items that would cause normal maintenance to be hindered.

\_\_\_\_ 183. **MUDFLAPS**

- 183.1 Four (4) MUDFLAPS shall be installed on the apparatus, two at the front and two at the rear.  
183.1.1 The MUDFLAPS shall be a minimum of 3/8" thick to prevent "sailing".  
183.2 Mudflaps shall be install in such a way they cannot get caught between the tire and the curb while backing up.

\_\_\_\_ 184. **WHEEL CHOCKS & MOUNTING**

- 184.1 There shall be one (1) pair of Zico #AC-32 wheel chocks provided with the apparatus.  
184.1.1 The chocks shall be mounted in Zico #SQCH-32-H mounting brackets in locations that are easily accessible under the left side body.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <b>185. <u>ZICO BRACKET WITH PHS STRAP</u></b><br>185.1 There shall be one (1) Zico N - 6.75 bracket(s) with PHS strap(s) installed in the following compartment(s):<br>185.1.1 Located L2  |
| _____ | _____ | <b>186. <u>ELECTRONIC SIREN</u></b><br>186.1 There shall be one (1) Federal model PA300MSC electronic siren installed in the cab.<br>186.1.1 Full features of the siren shall include Wail, Yelp, Hi -Lo, Air Horn, and a hard-wired microphone.  |
| _____ | _____ | <b>187. <u>CHASSIS BUILDER SUPPLIED HEAT EXCHANGER</u></b><br>187.1 The engine; chassis or auxiliary, providing power to drive the fire pump, shall have a supplementary cooling system that uses water from the discharge side of the pump to cool the engine coolant through the use of a closed heat exchanger.<br>187.1.1 The water from the pump and the engine coolant shall not be intermixed.<br>187.1.2 This cooling system shall be controlled by a valve on the pump operator's station.   |
| _____ | _____ | <b>188. <u>FUEL FILL</u></b><br>188.1 The fuel fill pocket shall be located in the left rear wheel well area.<br>188.1.1 The fuel fill shall have a Cast Products aluminum door with bezel installed.   |
| _____ | _____ | <b>189. <u>FUEL TANK GAUGE ACCESS PANEL</u></b><br>189.1 There shall be an removable panel provided in the rear compartment to allow for access to the fuel tank gauge without removing the fuel tank.  |
| _____ | _____ | <b>190. <u>GROUND LIGHTING</u></b><br>190.1 Lights shall be installed beneath the apparatus in areas where personnel may be expected to climb on and off of the apparatus.<br>190.1.1 The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards.<br>190.1.2 These areas shall include, but not be limited to, cab doors, side running boards, and the rear step area.   |
| _____ | _____ | <b>191. <u>CHASSIS MANUFACTURER PROVIDED MANUAL CAB LIFT LOCATION</u></b><br>191.1 When a manual cab lift is specified by the customer and provided by the chassis manufacturer, it shall be provided in such a place as to be accessible on the completed apparatus.<br>191.1.1 After body installation, the apparatus manufacturer shall relocate the existing cab lift in cases where it was installed in an inaccessible area.<br>191.1.2 The end result shall be a manual cab lift that is both accessible & usable after the body and all equipment have been installed on the apparatus.   |
| _____ | _____ | <b>192. <u>EMS COMPARTMENT</u></b><br>192.1 There shall be an EMS compartment installed in the chassis cab between the forward facing seats.<br>192.1.1 The compartment shall be 44" tall, 32" wide, and 18" deep.<br>192.1.2 The compartment shall be constructed of aluminum.<br>192.1.3 There shall be two (2) adjustable shelves provided in the compartment.<br>192.1.4 The compartment shall have a locking roll-up door provided on the front for easy access to equipment stored inside.<br>192.1.5 The exterior of the compartment shall be covered in Line-X™, a two component spray-in-place thermoplastic polyurethane system used for maximum protection of the body and equipment.<br>192.1.6 A compartment light shall be provided in the upper section of the compartment.<br>192.1.7 The light shall be activated by a switch on the roll-up door. |



Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

_____	_____	<b>193.   <u>MANUFACTURING LABELS</u></b>	
		193.1   A permanent plate shall be mounted in the driver's compartment specifying the quantity and type of the following fluids that may be used in the apparatus for normal maintenance.	
		193.1.1   Where a fluid is not applicable to the unit, the plate shall be marked N/A to inform the service technician who may not be familiar with the apparatus.	
		193.1.1.1   Engine oil	
		193.1.1.2   Engine coolant	
		193.1.1.3   Transmission fluid	
		193.1.1.4   Pump transmission fluid	
		193.1.1.5   Pump primer fluid	
		193.1.1.6   Drive axle fluid	
		193.1.1.7   Air-conditioning refrigerant	
		193.1.1.8   Power steering fluid	
		193.1.1.9   Cab tilt mechanism fluid	
		193.1.1.10   Transfer case fluid	
		193.1.1.11   Equipment rack fluid	
		193.1.1.12   Air compressor system lubricant	
		193.1.1.13   Generator system lubricant	
		193.2   A permanent plate shall be affixed in the driver's area that states the maximum number of personnel allowed to ride on the apparatus at any time.	
		193.3   A sign shall be affixed in the chassis cab, in plain sight of the driver, that states the overall travel height of the apparatus.	
		193.4   On any gated inlet at the pump operator's position, a permanent label shall be provided that states "Warning - serious injury or death could occur if inlet(s) is supplied by a pressurized source when the valve is closed."	
		193.5   All other appropriate labels to ensure safe operation of the apparatus shall be permanently affixed in conspicuous locations.	
_____	_____	<b>194.   <u>CAB</u></b>	
		194.1   The cab shall be a flat floor, flat roof, medium four door, aluminum tilt cab, built specifically for the fire service. specializing in chassis design for all fire service applications or equivalent.	
_____	_____	<b>195.   <u>TWO YEAR CHASSIS WARRANTY</u></b>	
		195.1   The chassis manufacturer shall warrant to the City the custom fire truck chassis for a period of twenty four (24) months with the exception of the actual fire apparatus chassis frame which carries a lifetime warranty.	
		195.1.1   The warranty period shall begin on the date the vehicle is accepted by the City.	
		195.1.2   The warranty may include conditional items which shall be listed in the detailed warranty document that shall be provided upon request.	
_____	_____	<b>196.   <u>CAB WARRANTY</u></b>	
		196.1   The cab shall be warranted for a period of ten (10) years.	
		196.1.1   Warranty conditions may apply and shall be listed in the detailed warranty document that shall be provided with the bid.	
_____	_____	<b>197.   <u>FRAME</u></b>	
		197.1   The frame side rails shall be channel type 10-1/4" x 3-1/2" x 3/8" with an inner channel 9-7/16" x 3-1/8" x 3/8" of 110,000 psi high strength steel, an RBM of 3,315,214 in. lbs. and a section modulus of 30.14 cu. in.	
		197.1.1   A minimum of seven (7) heavy duty fully gusseted bolted back to back and counted as one assembly cross members shall be installed using grade "8" flanged head bolts and flanged lock nuts.	
		197.1.1.1   Chassis mounted components such as engine, transmission, pumps etc. do not constitute structural cross members.	

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- 197.2 The area between the axle suspension hangers shall be free of any holes or fasteners in the flanges.  
197.2.1 No welding shall be incorporated in attachment of components.  
197.2.2 All frame dimensional cutting shall be by a plasma cutter.  
197.2.3 All relief areas shall be cut with a 2" at intersection points of cutouts with edges ground smooth to prevent a stress focal point.  
197.3 The frame shall carry a lifetime warranty to the City.

\_\_\_\_ 198. FRAME PAINT

- 198.1 The frame and running gear of the chassis shall painted with a standard black paint.  
198.1.1 The frame paint shall be applied before airlines and electrical wiring is installed.

\_\_\_\_ 199. CHASSIS WHEELBASE

- 199.1 The chassis wheelbase shall not be over 185" with out written authorization of the Fire Department and water tank shall not be more than 500 gallons.

\_\_\_\_ 200. OVERALL HEIGHT

- 200.1 The height of the vehicle shall not exceed 9' 7" from the ground.

\_\_\_\_ 201. FUEL TANK

- 201.1 The fuel tank shall have a capacity of sixty-eight (68) gallons, made of 12 gauge phosphate coated steel with chromate epoxy exterior finish.  
201.2 The fuel tank shall be mounted under the frame, behind the rear axle on strap hangers with a "U" strap bolted front and rear so the tank can be easily dropped and removed.  
201.2.1 Tank shall have vent port to facilitate rapid filling without "blow-back". A roll over ball check vent shall be installed.  
201.3 Dual draw tubes and dual sender ports shall be installed.  
201.3.1 2" NPT fill ports shall be available for right or left hand fill.  
201.3.2 A ½" NPT drain plug shall be centered in the bottom of the tank.  
201.4 Steel wire braid reinforced rubber supply and return hoses with reusable fittings shall be installed tank to engine.

\_\_\_\_ 202. FRONT BUMPER

- 202.1 A one piece, polished stainless steel front bumper shall be provided.  
202.1.1 The bumper shall be a 12" high, two (2) rib wrap-around type.  
202.2 The bumper shall be extended 16" ahead of the cab.

\_\_\_\_ 203. APRON WITH HOSEWELL

- 203.1 A 3/16" bright aluminum tread plate apron with an open top hoeswell built into the center shall be installed between the bumper and the face of the cab.  
203.1.1 The hoeswell shall be able to hold 200' of 1-3/4" hose.

\_\_\_\_ 204. CHROME PLATED TOW EYES

- 204.1 Two chrome plated tow eyes shall be installed below the bumper.

\_\_\_\_ 205. AIR HORNS

- 205.1 Dual Grover Stuttertone 21" air horns shall be recessed in the front bumper, one (1) each on the left and right hand sides.  
205.1.1 A 3/8" airline "teed" equal distance from each horn shall be installed.  
205.1.2 There shall be a pressure-protection valve installed that eliminates the use of the air horns when air pressure drops below 80 psi.

\_\_\_\_ 206. AIR HORN ACTUATION

- 206.1 Air horns actuation shall be accomplished by a dual lanyard cable, accessible to both the driver and officer.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>207. <u>ONE CPI SPEAKER</u></b></p> <p>207.1 One (1) Cast Products Inc. bright aluminum 100 watt speaker shall be recessed in the front bumper, on the driver's side.</p> <p>207.2 The speaker shall be bolted to bumper by means of a polished aluminum trim ring on the front face of the bumper.</p>  |
| _____ | _____ | <p><b>208. <u>AIR HORN/SIREN SELECTOR SWITCH</u></b></p> <p>208.1 .A rocker switch shall be installed in the switch panel between the driver and officer to allow control of either the air horn or the siren from the steering wheel horn button.</p>   |
| _____ | _____ | <p><b>209. <u>FRONT AXLE</u></b></p> <p>209.1 The front axle shall be an ArvinMeritor MFS-18 with a 3.74" drop and a 71.00" KPI.</p> <p>209.1.1 It shall have a minimum capacity of 18,000 lbs. GAWR.</p> <p>209.1.2 The bearings shall be oil lubricated.</p> <p>209.2 The springs shall be elliptical type, four (4) leaf, 54" long, 4" wide with a military double wrapped front eye.</p> <p>209.2.1 Both spring eyes shall have a case hardened threaded bushing installed with lubrication counterbore and lubrication land off crossbore with grease fitting.</p> <p>209.2.2 The spring capacity shall meet or exceed the capacity of the front axle.</p> <p>209.3 The hydraulic power assist steering gear shall be a TRW TAS-85.</p> <p>209.3.1 A Vickers hydraulic power steering pump shall be gear driven from the engine.</p> <p>209.3.2 The steering ratio shall be 23.3:1 and have 6.2 turns stop to stop.</p> |
| _____ | _____ | <p><b>210. <u>FRONT AXLE CRAMP ANGLE</u></b></p> <p>210.1 The hub piloted, MFS-18 model front axle cramp angle shall be a minimum of 50 degrees when using the 315/80R 22.5 front tires.</p>   |
| _____ | _____ | <p><b>211. <u>FRONT TIRES</u></b></p> <p>211.1 The front tires shall be Michelin 315/80R 22.5 20 ply "L" tubeless radial XZE1 highway tread with 22.5 x 9.00, ten (10) stud disc wheels.</p> <p>211.2 The tires and wheels shall be rated at 18,000 lbs.</p>   |
| _____ | _____ | <p><b>212. <u>ALUMINUM FRONT WHEELS</u></b></p> <p>212.1 The front wheels shall be hub piloted, polished aluminum 10 stud disc 22.5 x 9.00, complete with bright nut covers and hub caps.</p>  |
| _____ | _____ | <p><b>213. <u>OIL LUBRICATED FRONT WHEEL BEARINGS</u></b></p> <p>213.1 The front axle wheel bearings shall be oil lubricated with an oil level visual inspection window.</p>   |
| _____ | _____ | <p><b>214. <u>FRONT SHOCK ABSORBERS</u></b></p> <p>214.1 Two (2) Bilstein monotubular design, nitrogen gas charged shock absorbers shall be part of the front axle suspension.</p> <p>214.1.1 Bilstein shall warranty the shock for a period of five (5) years.</p>  |
| _____ | _____ | <p><b>215. <u>STEERING COLUMN AND WHEEL</u></b></p> <p>215.1 The steering column shall be a seven (7) position tilt and 2.25" telescopic type with a 18" steering wheel.</p> <p>215.1.1 The steering wheel shall be covered with black absorbite padding.</p> <p>215.2 The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch and head lamp dimmer switch on turn lever.</p>   |
| _____ | _____ | <p><b>216. <u>FRONT BRAKES</u></b></p> <p>216.1 The front brakes shall be 16.5" x 6" "S" cam type with automatic slack adjusters.</p>  |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>217. <u>REAR AXLE</u></b><br/> 217.1 The rear axle shall be a Meritor model #RS-24-160 with single reduction gearing and shall have a minimum rated capacity of 24,000 lbs. GAWR.</p>  |
| _____ | _____ | <p><b>218. <u>TOP SPEED</u></b><br/> 218.1 The top speed of the vehicle shall be approximately 70 mph at governed engine rpm.</p>  |
| _____ | _____ | <p><b>219. <u>REAR BRAKES</u></b><br/> 219.1 Rear brakes shall be 16.5" x 7" "S" cam type with automatic slack adjusters.</p>  |
| _____ | _____ | <p><b>220. <u>ABS BRAKE SYSTEM</u></b><br/> 220.1 A Meritor "WABCO" anti-lock braking system shall be installed on the front and rear Arvin Meritor axles for safer vehicle control during braking and reduced stopping distance in skid applications.<br/> 220.2 System design shall incorporate a diagonal circuit electronically controlled through a sensor and tone ring on each wheel.<br/> 220.3 A dash mounted anti-lock lamp shall be provided to notify the driver of a system malfunction.<br/> 220.4 A momentary test switch shall be installed to test the system for diagnostic code.</p>  |
| _____ | _____ | <p><b>221. <u>REAR TIRES</u></b><br/> 221.1 The rear tires shall be Michelin 11R 22.5 16PR "H" tubeless radial XDN tread, rated 24,000 lbs.</p>  |
| _____ | _____ | <p><b>222. <u>ALUMINUM REAR WHEELS</u></b><br/> 222.1 The rear wheels shall be polished aluminum 10 stud disc 22.5 x 8.25, complete with bright nut covers and rear axle hub covers.</p>   |
| _____ | _____ | <p><b>223. <u>OIL LUBRICATED REAR WHEEL BEARINGS</u></b><br/> 223.1 The rear axle shall have oil lubricated wheel bearings.</p>  |
| _____ | _____ | <p><b>224. <u>REAR SUSPENSION</u></b><br/> 224.1 The vehicle shall be equipped with a single rear axle with single-reduction gears and a manufacturer's rated capacity of 24,000 lbs.<br/> 224.2 The suspension will be 24,000 lb. capacity Reyco 79KB variarate captive slipper type with 57.5" x 3" springs with 1 adjustable and 1 fixed torque rod..</p>   |
| _____ | _____ | <p><b>225. <u>REAR SHOCK ABSORBERS</u></b><br/> 225.1 The rear spring suspension shall have Bilstein monotube gas charged shock absorbers.</p>   |
| _____ | _____ | <p><b>226. <u>STAINLESS STEEL WHEEL TRIM KIT</u></b><br/> 226.1 The front and rear wheels shall have stainless steel lug nut covers.<br/> 226.1.1 The front axles shall be covered with stainless steel baby moons with hole to view oil seal window.<br/> 226.1.2 The rear axles shall be covered with foam mounted stainless steel high hats.<br/> 226.2 The lug nut covers, baby moons and high hats shall be American made Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel meeting D.O.T. certification standards.<br/> 226.2.1 All stainless steel baby moons and high hats shall carry a lifetime warranty.</p> |
| _____ | _____ | <p><b>227. <u>SINGLE REAR AXLE AIR BRAKE SYSTEM</u></b><br/> 227.1 A rapid build-up air brake system shall be provided.<br/> 227.1.1 It shall include three (3) air reservoirs with a total of 4,136 cu.in. air capacity.</p>  |

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- 227.2    A parking brake on the spring actuated chambers on the rear axle brakes with a push-pull valve on the instrument panel shall be installed.
- 227.3    The rear axle spring brakes are to automatically apply in case of air pressure drop below 60 psi with a mechanical means for releasing the spring brake chambers.

\_\_\_\_\_    **228.    AIR DRYER**

- 228.1    A WABCO 1200 System Saver spin-on desiccant air dryer with an automatic heated moisture ejector shall be installed in the air brake system.

\_\_\_\_\_    **229.    HEATED AUTOMATIC MOISTURE EJECTORS ON AIR TANKS**

- 229.1    Heated, automatic moisture ejectors shall be installed in addition to the manual drain valves.

\_\_\_\_\_    **230.    NYLON AIR LINE TUBING**

- 230.1    A dual air system plumbed with color coded reinforced nylon tubing air lines shall be installed.
- 230.1.1    The primary (rear) brake line shall be green, the secondary (front) brake line red, the parking brake line orange and the auxiliary (outlet) will be blue.
- 230.2    Brass compression type fittings shall be used on the nylon tubing.
- 230.2.1    All drop hoses shall be fiber reinforced neoprene covered hoses.

\_\_\_\_\_    **231.    ADDITIONAL AIR RESERVOIR**

- 231.1    An additional 1200 cu. in. air reservoir shall be installed and isolated to prevent depletion of the air to the air brake system and to act as a supply tank for operating air equipment.
- 231.1.1    It shall be plumbed with a 90 psi pressure protection valve on the reservoir supply side.

\_\_\_\_\_    **232.    OUTSIDE AIR INTAKE CONNECTION**

- 232.1    A quick release outside air intake male connector shall be provided in the left cab step area for shore-line air intake to maintain air system build-up.
- 232.1.1    The air connector supplied shall be compatible with either a Milton 783, Parker Hannifin 2C or Meyers 54-401 connector.

\_\_\_\_\_    **233.    AIR COMPRESSOR**

- 233.1    The air compressor on the engine shall be capable of producing a minimum of 18.7 cfm at 1250 engine rpm.
- 233.1.1    It shall be gear driven, engine oil pressure lubricated and cooled by the engine cooling system.
- 233.1.2    The air compressor shall have a 5-year warranty.

\_\_\_\_\_    **234.    ENGINE**

- 234.1    A Cummins ISL-400, turbocharged, charge air cooled engine shall be provided.
- 234.1.1    TYPE:
- 234.1.1.1    In-Line six (6) cylinder, 4 cycle
- 234.1.2    HORSEPOWER:
- 234.1.2.1    400 @ 2000 rpm
- 234.1.3    TORQUE:
- 234.1.3.1    1200 lb. ft. @ 1300 rpm
- 234.1.4    DISPLACEMENT:
- 234.1.4.1    540 cu. in.
- 234.1.5    GOVERNOR:
- 234.1.5.1    Electronic
- 234.2    A wiring harness shall be supplied with a drop out at the back of the cab.
- 234.2.1    The harness shall include a connector to allow an optional harness for the pump panel to be plugged into it. Circuits shall be provided for multiplexed gauges, hand throttle, high idle and PSG system.
- 234.2.2    A circuit for J1939 data link shall also be provided at the drop out.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- 234.3 A spin on engine coolant filter with shut-off valve shall be provided.  
234.4 An engine mounted combination full flow/by-pass oil filter with replaceable spin on cartridge shall be part of the engine's lubrication system.

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**235. ENGINE WARRANTY**

- 235.1 The Cummins engine shall be warranted for a period of five (5) years or 100,000 miles, whichever occurs first.  
235.2 Warranty shall start when the unit is put in service.

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**236. FUEL FILTER - CUMMINS ENGINE**

- 236.1 A Fleetguard fuel filter shall be installed on the Cummins engine.

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**237. ISL JACOBS ENGINE BRAKE**

- 237.1 A Jacobs engine compression brake shall be installed on the engine.  
237.1.1 The compression brake's operation shall commence with the release of accelerator, when in operational mode and work in conjunction with a transmission downshift schedule to increase the auxiliary braking system's performance.  
237.1.2 The chassis brake lights shall activate when the compression brake is actuated and the On/Off switch is placed in the On position.  
237.2 The Wabco anti-lock brake system shall be interfaced with the Jacobs brake & transmission in such a fashion that, if there is an ABS event, the anti-lock brake system assumes authority/priority and discontinue the secondary braking system/s until the ABS event is finished.  
237.3 In addition to the above, an interlock system shall be provided; complete with a relay for pump cutout, to activate when the pump is placed into pump mode.

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**238. EXHAUST SYSTEM**

- 238.1 The exhaust system shall be constructed of heavy duty truck components. .  
238.2 All exhaust tubing shall be aluminized or stainless steel.  
238.3 The exhaust system shall terminate on the right side (officer's side) of vehicle ahead of rear wheels  
238.4 The muffler shall be double wrapped aluminized type that meets or exceeds the engine manufactures's specifications as well as all current federal, state, and local noise level laws and/or requirements  
238.5 A heat deflector and/or sufficient insulation shall be provided where the exhaust system is routed under any portion of the body module  
238.6 The manufacturer shall provide (at no cost to the city) any tail pipe modification to allow usage of an exhaust removal system.  
238.7 The city shall specify any required modification at the pre-construction conference.

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**239. TAIL PIPE CHROME EXTENSION**

- 239.1 A radiused chrome exhaust tail pipe extension, to direct exhaust gases downward, which terminates on the right hand side of the chassis, forward of the rear tires, shall be installed with a galvaneal band clamp.

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**240. AIR CLEANER**

- 240.1 The air cleaner shall be Farr #62891-001 dry type with a replaceable element, it shall have an outside air intake with an ember separator filter and an indicator light in the warning light cluster to show when the air cleaner element requires replacement.

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**241. COOLING SYSTEM**

- 241.1 The cooling system shall have sufficient capacity to keep the engine properly cooled under all conditions of road and pumping operations.  
241.1.1 The cooling system shall be de-signed to meet or exceed the engine and transmission manufacturer and EPA requirements.  
241.2 **Radiator**  
241.2.1 The radiator shall be aluminum constructed crossflow design.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- 241.2.1.1 The radiator shall be of sufficient size to provide efficient cooling under all conditions.
- 241.2.1.2 The radiator shall have a complete deaeration system capable of removing entrained air from the system.
- 241.2.1.3 The radiator shall also be equipped with a drain cock to drain the coolant for serviceability.
- 241.2.1.4 The cooling system shall be equipped with a separate tank that allows the system to be filled.
- 241.2.1.5 (The system may be filled and checked through the grille on some models).
- 241.2.1.6 The tank will include a low coolant probe and a sight glass to monitor the coolant level.

241.2.2 The cooling package shall have extended life coolant installed.

- 241.2.2.1 Engines equipped with coolant filters will be supplied without coolant additives.

241.2.3 All radiator hoses shall be silicone with stainless steel constant torque clamps.

241.3 **Charge Air Cooler**

241.3.1 The charge air cooler shall be a cross-flow design constructed completely of aluminum with welded side tanks.

- 241.3.1.1 The charge air cooler shall be located above the radiator to allow a single depth core and efficient cooling system.

241.3.2 The charge air system shall be installed with silicone hump hoses and stainless steel "T" style clamps.

\_\_\_\_ 242. **COOLING SYSTEM FAN**

- 242.1 The engine cooling system shall incorporate a thermostatically controlled, clutched fan.
- 242.2 The fan will automatically lock up when the vehicle is placed in pumping mode.
- 242.3 The fan shall be installed on the engine and includes a shroud.
- 242.3.1 Recirculation shields shall be installed to insure that air which has passed through the radiator is not drawn through it again.

\_\_\_\_ 243. **SILICONE HEATER HOSE**

- 243.1 All heater system hoses shall be silicone with a stainless steel constant torque clamp approved for use with silicone hose.

\_\_\_\_ 244. **ENGINE-PUMP HEAT EXCHANGER**

- 244.1 A single bundle type heat exchanger shall be provided and plumbed so that water from the pump does not come in contact with the engine coolant to allow the use of water from the discharge side of the pump for cooling the engine coolant.
- 244.2 The heat exchanger is to be installed between the engine and the radiator without a shut-off valve.

\_\_\_\_ 245. **TRANSMISSION**

- 245.1 The transmission shall be an Allison EVS3000P five (5) speed automatic with electronic controls.
- 245.1.1 The transmission shall have two (2) 10-bolt PTO pads.
- 245.2 The transmission shall be equipped with an air to oil transmission cooler located below the radiator allowing a single depth core and efficient cooling package.
- 245.2.1 The transmission cooler shall be mounted in a manner to allow maximum approach angle by not protruding below the frame more than an inch.
- 245.2.2 The transmission cooler shall be constructed completely of aluminum with welded side tanks.
- 245.2.3 The transmission shall have two (2) internal oil filters.
- 245.2.4 The transmission oil cooler shall be rated to at least 150% of the GVWR
- 245.3 Fourth gear hold-in range may be accomplished by wiring for a pumping application.
- 245.4 The transmission gear ratios shall be:

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- 245.4.1 1st 3.49:1
- 245.4.2 2nd 1.86:1
- 245.4.3 3rd 1.41:1
- 245.4.4 4th 1.00:1
- 245.4.5 5th 0.75:1
- 245.4.6 Rev 5.03:1

- \_\_\_\_\_ 246. **TRANSMISSION TOUCH PAD**  
246.1 An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and reach.
- \_\_\_\_\_ 247. **DRIVE LINES**  
247.1 All drive lines shall be 1710 heavy duty series with "glide coat" splines on all slip shafts.
- \_\_\_\_\_ 248. **TRANSMISSION WARRANTY**  
248.1 The Allison 3000 EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage.  
248.1.1 Parts and labor shall be included in the warranty.  
248.2 **The transmission must be filled with Transynd synthetic fluid or approved equal.**
- \_\_\_\_\_ 249. **MULTIPLEX ELECTRICAL SYSTEM**  
249.1 A multiplex electrical system shall be supplied.  
249.1.1 The system shall be a single starting type, installed per NFPA 1901.  
249.1.2 The electrical system shall be 12 volt, suppressed per SAE J551 with six (6) Douglas BCI-31 950 CCA batteries with 210 minute reserve capacity and 3/0 welding type dual path starter cables per SAE J541.  
249.2 The Multiplexed wiring system shall include the following:  
249.2.1 Dash mounted information center with a 6"H x 4"W screen display  
249.2.2 Systems Diagnostic Menu and controls  
249.2.3 Solid state switching  
249.2.4 Peer to Peer network architecture  
249.2.5 Weatherproof Nodes  
249.2.6 Sequences & sheds electrical loads  
249.3 All wiring to be appropriate gauge cross link with 311 degree F. insulation.  
249.3.1 All wires in the chassis shall be circuit numbered and function coded, in addition the SAE wiring will be color coded.  
249.3.2 The wiring shall be protected by 250 degree F. minimum high temperature flame retardant loom as required.  
249.4 The starting system shall be supplied with the following:  
249.4.1 One (1) Cole-Hersee #2484 master battery switch  
249.4.2 One (1) Cole-Hersee #EX26654A ignition switch  
249.4.3 One (1) starter button  
249.4.4 One green LED indicator for battery "on"  
249.4.5 One red LED indicator for ignition "on"  
249.5 Includes 4 rocker switches on driver's dash:  
249.5.1 Secondary Braking On/Off switch  
249.5.2 Secondary Braking Variance Control (High/Low) or (High/Med/Low)  
249.5.3 Spare  
249.5.4 Spare  
249.5.5 If air conditioning option is selected the system will include inside and outside ambient temperature monitoring and "Climate control".  
249.6 Includes high idle, ground lighting and load management
- \_\_\_\_\_ 250. **BATTERY JUMPER STUDS**  
250.1 Battery jumper studs shall be provided under the driver's side battery box.  
250.1.1 The studs allow the vehicle to be jump started or cab to be raised in an emergency due to battery failure.



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| _____ | _____ | <p><b>251. <u>PORTABLE "PLUG IN" MULTIPLEX DIAGNOSTICS</u></b></p> <p>251.1 A "Plug In" type multiplex electrical system/s diagnostic package suitable for use with portable lap top computers shall be provided.</p> <p>251.1.1 The package shall allow more detailed investigation into electrical systems.</p> <p>251.2 Includes high idle, ground lighting and load management</p>  |
| _____ | _____ | <p><b>252. <u>INSTRUMENTATION</u></b></p> <p>252.1 An ergonomically designed instrument panel shall be provided.</p> <p>252.2 The instrument panel shall contain the following red backlit gauges and LED indicators, all within clear view of the driver.</p> <p>252.2.1 One (1) Electronic tachometer with integral digital hour meter</p> <p>252.2.2 One (1) Electronic speedometer. The speedometer shall include a digital odometer/trip odometer</p> <p>252.2.3 One (1) three function gauge with front air pressure, rear air pressure and fuel level</p> <p>252.2.4 One (1) four function gauge with oil pressure, coolant temperature, transmission temperature and volt meter</p> <p>252.3 The center of the instrument panel shall contain a cluster of indicator lamps informing the driver of the following:</p> <p>252.3.1 <u>RED LAMPS</u></p> <p>252.3.1.1 Low air system one (1) or two (2)</p> <p>252.3.1.2 Low engine oil pressure</p> <p>252.3.1.3 High engine coolant temperature</p> <p>252.3.1.4 High transmission temperature</p> <p>252.3.1.5 Low coolant level (with option)</p> <p>252.3.1.6 Air filter restriction</p> <p>252.3.1.7 Low fuel level (activates at 1/4 full)</p> <p>252.3.1.8 Stop engine</p> <p>252.3.1.9 High or low voltage</p> <p>252.3.1.10 Parking brake set</p> <p>252.3.2 <u>GREEN LAMPS</u></p> <p>252.3.2.1 Directional left and right indicators</p> <p>252.3.2.2 Auxiliary braking device active</p> <p>252.3.2.3 Low traction (indicates wheel slip) (with ATC option)</p> <p>252.3.2.4 High idle active (with high idle option)</p> <p>252.3.3 <u>YELLOW</u></p> <p>252.3.3.1 Check engine</p> <p>252.3.3.2 Check transmission</p> <p>252.3.3.3 ABS brakes</p> <p>252.3.3.4 Wait to start (ISB/C/L only)</p> <p>252.3.3.5 Water in fuel (with option)</p> <p>252.3.3.6 Engine maintenance (Cummins only)</p> <p>252.3.4 <u>BLUE LAMP</u></p> <p>252.3.4.1 High beam headlight on</p> <p>252.3.5 <u>AUDIBLE WARNING SYSTEM FOR THE FOLLOWING:</u></p> <p>252.3.5.1 Low air system</p> <p>252.3.5.2 Low engine oil pressure</p> <p>252.3.5.3 High engine coolant temperature</p> <p>252.3.5.4 High transmission temperature</p> <p>252.3.5.5 Low coolant level (with low coolant option)</p> <p>252.3.5.6 High and low voltage</p> <p>252.3.5.7 Stop engine</p> <p>252.3.6 Thermal reset circuit breakers and relays shall be installed behind the electrical center cover.</p> |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>253. <u>CENTER ROCKER SWITCH PANEL - XD</u></b><br/> 253.1 The center main rocker switch panel shall include fourteen (14) red LED backlit and labeled rocker switches.<br/> 253.1.1 The single row of switches shall be installed in the center of the electrical housing in a hinged panel.<br/> 253.1.2 The left side of the panel shall contain a rocker type headlight switch with instrument lamp slide dimmer and intermittent windshield wiper/washer switch.</p>  |
| _____ | _____ | <p><b>254. <u>POWER AND GROUND STUDS FOR TWO-WAY RADIO</u></b><br/> 254.1 Power and grounding studs shall be provided and installed behind the electrical center cover for two-way radios.<br/> 254.2 A 40 amp fuse will be located at the batteries for circuit protection.</p>   |
| _____ | _____ | <p><b>255. <u>LOAD MANAGER</u></b><br/> 255.1 The load management system will be installed by the apparatus manufacturer or replaced with a multiplexed electrical system.</p>   |
| _____ | _____ | <p><b>256. <u>ALTERNATOR</u></b><br/> 256.1 A 290 amp 12 volt Leece Neville alternator with a minimum rating of 290 amps (220 amps at idle) integral regulator and #10 screw AC terminals shall be installed.<br/> 256.2 A low voltage alarm (audible and visual) shall be provided in the cab of the unit/s.</p>  |
| _____ | _____ | <p><b>257. <u>BATTERY CONDITIONER WITH AUTO-EJECT</u></b><br/> 257.1 A Kussmaul Auto Charge 1200 battery conditioner with built-in isolator regulating equal voltage to all batteries shall be installed in the cab behind the driver's door.<br/> 257.2 It is to be powered by a weather proof Kussmaul Super 15 amp 120V anti-arcing auto-eject receptacle with a red cover.<br/> 257.3 The receptacle shall be located behind the driver's door.<br/> 257.4 A visual indicator system with indicator lights, a gauge, or bar graph display shall be installed next to the auto-eject to let the driver know the system is charging.</p> |
| _____ | _____ | <p><b>258. <u>HEADLIGHTS</u></b><br/> 258.1 Four (4) rectangular halogen headlamps with separate high and low beams in bright bezels shall be provided.<br/> 258.1.1 The headlamps shall be equipped with a "Daytime Running" light feature, which will illuminate the headlights to 80% brilliance when the ignition switch is in the "On" position and the parking brake is released.<br/> 258.2 Two (2) round side turn signal/marker lights shall be provided on the front cab corners.</p>  |
| _____ | _____ | <p><b>259. <u>MARKER LAMPS</u></b><br/> 259.1 Five (5) I.C.C. approved Light Emitting Diode (LED) cab marker lamps shall be installed on the face of the cab above the windshield.</p>   |
| _____ | _____ | <p><b>260. <u>LED FRONT WARNING LIGHTS &amp; LED TURN SIGNALS</u></b><br/> 260.1 Two (2) approved Whelen 60R00FRR, red LED alternate flash warning lights shall be installed on the cab front above the headlamps.<br/> 260.2 Whelen model 60A00TAR, amber LED programmable turn signals shall be installed outboard of the warning lights.</p>  |
| _____ | _____ | <p><b>261. <u>INTERSECTOR LIGHTS</u></b><br/> 261.1 Two (2) Whelen 60ROOFRR LED red, wide angle warning lights shall be installed on the bumper ends to act as intersector lights.</p>   |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

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| _____ | _____ | <p><b>262. <u>MOUNT CUSTOMER SUPPLIED ANTENNA</u></b></p> <p>262.1 A customer supplied antenna shall be installed and coaxial cable routed to specified location by the chassis manufacturer.</p> <p>262.2 Cable shall looped &amp; taped off above headliner.</p>   |
| _____ | _____ | <p><b>263. <u>ALTERNATING HEAD LAMP WARNING SYSTEM</u></b></p> <p>263.1 An alternating high beam head lamp flashing system shall be installed into the high beam head lamp system that will allow the high beams to flash alternately from left to right.</p> <p>263.2 The completed system shall be capable of using high beam to override flashing function and will flash high beams when low beam head lamps are selected.</p>   |
| _____ | _____ | <p><b>264. <u>BACKUP ALARM</u></b></p> <p>264.1 An ECCO #575 backup alarm shall be installed at the rear of the chassis with an output level of not less than 107 dB(A).</p> <p>264.2 The alarm will automatically activate when the transmission is placed in reverse.</p>  |
| _____ | _____ | <p><b>265. <u>GROUND LIGHTING</u></b></p> <p>265.1 The cab shall be equipped with Trucklite brand #40044 under cab lighting.</p> <p>265.1.1 The sealed lights shall be located under the cab at each door.</p>   |
| _____ | _____ | <p><b>266. <u>CAB - FANS</u></b></p> <p>266.1 Four (4) six inch ( 6") diameter fans equipped with wire grounds, shall be mounted in the cab.</p> <p>266.2 Each fan shall have an integral switch and shall be secured on an adjustable mounting bracket.</p> <p>266.3 Two shall be mounted near the windshield in the front portion of the cab, and the other two shall be mounted at the rear portion of the cab as mutually agreeable to the manufacturer and the city.</p>  |
| _____ | _____ | <p><b>267. <u>FRONT CAB ACCESS FACIA</u></b></p> <p>267.1 The front cab fascia shall be constructed of aluminum, which will attach to the front cab skin and act as a fascia only, providing no additional support for the cab aluminum structure.</p> <p>267.2 The front fascia will cover the front aluminum cab structure from the bottom of the windshield down to the bottom of the cab.</p> <p>267.2.1 The front cab fascia shall have provisions for four (Hi/Low Beam) headlamps, turn signal lamps and up to four warning lamps.</p> <p>267.3 The front fascia shall allow access to check and fill the engine oil, power steering fluid and wiper washer fluid.</p> <p>267.3.1 Access is also provided for servicing the windshield wiper motor and linkage, ember separator, headlamps, electrical bulkhead connectors, transmission ECU and the multiplex V-Mux control.</p> |
| _____ | _____ | <p><b>268. <u>FLAT FLOOR MFD TILT CAB</u></b></p> <p>268.1 The cab shall be a flat floor, flat roof , MFD (medium four door), aluminum tilt cab, capable of seating six (6) firefighters or equivalent.</p> <p>268.2 The cab shall be of the Eurospace interior design allowing for easy communication inside the cab.</p> <p>268.2.1 The cab overall length shall be 128.00" with 54.00" from the centerline of the front axle to the back of the cab.</p> <p>268.3 The rear cab wall shall be .090" thick aluminum.</p> <p>268.3.1 The rear floor to the headliner height shall be 55.00".</p> <p>268.4 The cab front skin and floor shall be .190" thick aluminum.</p> <p>268.4.1 The inside width shall be 90.00" and the front floor to headliner height above the driver and officer shall be 58.00".</p>  |

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- 268.5 All glass used in the cab shall be automotive tint.
  - 268.5.1 The windshield shall have a maximum of 2890 sq.in. area and be of the wraparound design 52.88" wide and 27.88" high for maximum visibility.
  - 268.5.2 Left and right windshield shall use the same interchangeable glass.
  - 268.5.3 All cab windows shall be the same height as the windshield to provide full panoramic visibility.
- 268.6 The side rear door windows shall be roll-down type 27.50" x 26.00" with a total glass area of 715 sq. in. each.
- 268.7 The front doors shall have a full roll down window 27.00" x 26.00" with a total glass area of 702 sq. in. each.
- 268.8 A molded rubber 11" grab handle shall be provided inside the cab on the hinge post at the officer door for entering and exiting the cab.
- 268.9 The driver and officer seats shall have an 8" high x 16.25" wide x 17.38" deep compartment in the seat box beneath them.
  - 268.9.1 The compartment shall have a hinged door with an opening of 6" high x 12.50" wide.
- 268.10 Intermittent electric wipers with a single motor and electric powered "wet arm" type windshield washers shall be provided.
  - 268.10.1 Access to the wiper motor shall be through the drivers side headlamp module located on the front cab fascia.

\_\_\_\_\_ 269. **CAB DOORS**

- 269.1 The cab doors shall be flush, full length type with hidden .375" stainless steel door hinges.
  - 269.1.1 All doors shall be equipped with push button type exterior latches, suitable for use with firefighter mittens, and keyed alike locks that are designed to prevent accidental lock-out or equivalent.
- 269.2 The interior latches shall be flush paddle type which are incorporated into an upper door panel.
- 269.3 The front doors shall measure 43.00" wide x 77.00" high with .13" thick aluminum skins.
  - 269.3.1 The steps shall be a two (2) step configuration with the lower step constructed of stainless steel open grate material and the intermediate step shall be covered with embossed, NFPA compliant, aluminum tread plate.
- 269.4. The following measurements shall apply:
  - 269.4.1 First step: 12.13" deep x 30.63" wide
  - 269.4.2 Intermediate step: 8.62" deep x 33.00" wide
  - 269.4.3 Ground to first step: approximately 21.00"
  - 269.4.4 First step to intermediate step: 11.00"
  - 269.4.5 Intermediate step to floor: 11.00"
- 269.5 The rear doors shall measure 34.00" wide x 77.00" high with .13" thick aluminum skins.
  - 269.5.1 The rear steps shall be a two (2) step configuration with the lower step constructed of stainless steel open grate material and the intermediate step covered with embossed, NFPA compliant, aluminum tread plate.
- 269.6 The following measurements shall apply:
  - 269.6.1 First step: 11.00" deep x 21.50" wide
  - 269.6.2 Intermediate step: 11.50" deep x 23.50" wide
  - 269.6.3 Ground to first step: approximately 21.00"
  - 269.6.4 First step to intermediate step: 12.50"
  - 269.6.5 Intermediate step to floor: 12.50"

\_\_\_\_\_ 270. **ZOLOTONE PAINTED INNER DOOR PANELS**

- 270.1 The one piece inner door panel shall be texture painted with Zolotone in place of the standard vacuum formed upper and aluminum treadplate lower.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- \_\_\_\_ \_ 271. **STAINLESS TRIM**  
271.1 A stainless steel trim band, 10" high with upper and lower trim affixed without holes and fasteners shall be installed on the lower exterior sides of the cab and doors, equal in height of the front bumper.
- \_\_\_\_ \_ 272. **ENGINE COVER XTREME DUTY**  
272.1 The fixed type engine cover shall be a maximum of 23.00" high x 41.50" wide.  
272.1.1 The back of the tunnel shall be 51.00" from the back wall.  
272.2 The cover shall be an integral part of the cab and made of aluminum.  
272.2.1 The exterior shall be painted with a Zolotone texture finish and the underside of the cover shall be heavily insulated with 1" multi-layer foam with a non-conductive Mylar backing and held in place with adhesive and aluminum pins and retention caps.
- \_\_\_\_ \_ 273. **MOBILE DATA TERMINAL**  
273.1 A Mobile Data Terminal (MDT) provision shall be provided and a glove box  
273.1.1 The MDT provision shall be recessed 3.00" below the surface of the dash and 16" wide x 14"L  
273.1.2 The glove box shall be 6"H x 14"W x 6"D with a hinged locking door.  
273.1.3 The side tray shall provide a mountable surface area of 10.88" wide x 10.63" long
- \_\_\_\_ \_ 274. **FULL WIDTH CREW CAB DOOR ASSIST RAILS**  
274.1 Black powder coated cast aluminum assist rails shall be provided and installed on the inside of the rear crew doors the full width of the window glass.  
274.1.1 The rails shall assist personnel in exiting and entering the cab.  
274.1.2 The rails shall be located at the retracted door window glass level and will protect the exposed window glass area.
- \_\_\_\_ \_ 275. **INTERIOR LIGHTING**  
275.1 The cab interior lighting shall consist of the following:  
275.1.1 A red/white dome lamp with shall be located over each door.  
275.1.2 The white lamp shall be activated by its respective door when opened and both activated by an individual switch on the light.  
275.1.3 A clear light shall be located in the molded panel of each door and activated when the door is opened.  
275.1.4 The light shall be 6.5" long x 3" high.  
275.1.5 A two (2) light module with dual map lights shall be located in the headliner, over the engine tunnel.
- \_\_\_\_ \_ 276. **FLASHING DOOR AJAR LIGHT**  
276.1 A red flashing door ajar light shall be located in the headliner, centered in the cab.  
276.1.1 The light shall be 6.00" long x 2.50" wide x 1.75" high and labeled "Do Not Move Apparatus".  
276.1.2 The light shall be wired to indicate an open door on the cab when the parking brake is released.
- \_\_\_\_ \_ 277. **ENGINE TUNNEL LIGHT**  
277.1. A work light shall be provided and installed under the engine tunnel.
- \_\_\_\_ \_ 278. **MAP LIGHT**  
278.1 A Sunnex goose neck style instrument panel map light shall be installed on the right hand side of the dash panel.
- \_\_\_\_ \_ 279. **12 VOLT RECEPTACLE**  
279.1 Two 12 volt cigarette lighter type receptacles shall be provided in the cab dash on the officer's side to act as a power source.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- \_\_\_\_\_ 280. **CONTINUOUS 12 VOLT CONNECTION**  
280.1 There will be four (4) 12 volt power connections provided.  
280.1.1 One in the medical compartment in the rear of the truck cab, one in the right rear compartment of the body and one near the Multiplex Data Terminal docking port and one to be determined during the pre-construction conference.  
280.1.2 All circuits will be wired to handle 20 amps and have continuous power when the vehicle is operating or plugged into shore power.
- \_\_\_\_\_ 281. **DRIVER SEAT**  
281.1 Drivers seat shall be high back Seats Inc. 911 "Universal" 4-way air suspended type with air control valve located at lower front of seat.  
281.1.1 The suspension mechanism shall be enclosed by a rubber bellows.  
281.2 The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor.
- \_\_\_\_\_ 282. **IMPERIAL 1200 COVERED SEATS**  
282.1 The seats shall be covered with Imperial 1200 vinyl coated polyester material.
- \_\_\_\_\_ 283. **SCBA OFFICER SEAT**  
283.1 The officer seat shall be a Seats Inc. 911 "ABTS" SCBA style for the quick donning of an air pack.  
283.2 The seat back shall include an angle hinged split headrest and ZICO "CRS" brackets w/6" tank retention clips.  
283.2.1 A padded vinyl cover shall be supplied over the SCBA cavity.  
283.3 The seat shall be equipped with a red integrated 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly.
- \_\_\_\_\_ 284. **CREW AREA FLIP UP SEATS**  
284.1 Two spring loaded hinged fold up seat bottoms shall be installed outboard on the rear wall of the cab.  
284.1.1 The rear wall of the cab shall serve as the back rest for the seat.  
284.2 Each seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor.
- \_\_\_\_\_ 285. **SCBA CREW SEATS**  
285.1 Two (2) outboard rear facing Seats Inc. 911 "ABTS" SCBA style seats for the quick donning of an air pack shall be provided.  
285.2 The seat back shall include an angled hinged split headrest and ZICO "CRS" bracket w/6" tank retention clips.  
285.2.1 A removable padded vinyl cover shall be supplied over the SCBA cavity.  
285.3 Each seat shall be equipped with a red integrated 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly.
- \_\_\_\_\_ 286. **INTERIOR TEXTURE FINISH**  
286.1 The interior metal surfaces of the cab shall be painted with a Zolatone gray texture finish.
- \_\_\_\_\_ 287. **XTREME DUTY INTERIOR**  
287.1 The cab interior shall be designed for Xtreme Duty with the ABS header and dash trim eliminated.
- \_\_\_\_\_ 288. **HVAC SYSTEM**  
288.1 A ceiling mounted HVAC system shall be provided.  
288.1.1 The system shall consist of an over-head heater/defroster/air conditioning unit mounted above the engine tunnel in a central location with dash mounted controls.  
288.1.2 A roof mounted condenser  
288.1.3 The ceiling mounted HVAC system includes 14 adjust-able louvers.

Meets Specs.  
Yes No

Company Name \_\_\_\_\_

- 288.1.4 Six (6) forward facing louvers for windshield, 45,000 Btu's of heat at 460 cfm for defrosting.
- 288.1.5 Four (4) rearward facing louvers to direct air for crew comfort and six (6) for driver and officer comfort.
- 288.1.6 In "Cabin Mode" the system is designed to produce 60,000 Btu's of heat and 32,000 Btu's of cooling.
- 288.1.7 The system has an engine mounted Seltec TM-21 freon compressor.
- 288.1.8 The system shall be capable of lowering the cab interior temperature from 100 degrees to 70 degrees within thirty minutes, with a relative humidity of 60 percent.
- 288.2 The A/C lines will be a mixture of custom bent zinc coated steel fittings and Aeroquip flexible hose with E-Z clip fittings.

\_\_\_\_\_ **289. DELUXE INSULATION PACKAGE**

- 289.1 Additional insulation in the cab shall be installed to improve air conditioning and/or heating in extreme weather climates as well as reducing road noise.
- 289.1.1 The sides, roof and rear wall of the cab shall contain 1" thick multi-layered insulation.

\_\_\_\_\_ **290. REAR CREW CAB HEATER**

- 290.1 One (1) 50,000 btu heater shall be provided and installed in the rear section of the crew cab at the back wall or under forward facing seat riser.

\_\_\_\_\_ **291. CAB TILT ACTUATION**

- 291.1 The entire cab shall tilt 45 degrees to allow for easy maintenance of the engine and transmission.
- 291.2 The cab tilt actuation shall be with an electric over hydraulic lift pump with a control box on a pennant for safe visual operation.
- 291.3 The lift system shall have an ignition interlock and red lock down indicator lamp, which shall illuminate when holding "down" switch to indicate safe road operation.
- 291.3.1 It shall be necessary to activate the master battery switch with the park brake set in order to tilt the cab.
- 291.4 Two cab tilt cylinders shall be provided with velocity fuses in each cylinder port.
- 291.4.1 The cab pivots shall be 1.90" ball and be anchored to frame brackets with 1.25" diameter studs.
- 291.5 Two spring loaded hydraulic hold down hooks outboard of the frame shall be installed for holding the cab securely to the frame.
- 291.6 A steel safety assembly shall be installed on the right side cab lift cylinder to prevent accidental cab lowering.
- 291.6.1 The safety assembly shall fall over the lift cylinder when the cab is in the "up" position.
- 291.6.2 A cable release system shall also be provided to clear the safety assembly from the lift cylinder when lowering the cab.

\_\_\_\_\_ **292. WHEEL WELL LINERS**

- 292.1 Full width wheel well liners shall be installed on the extruded cab.
- 292.1.1 The liners shall be 16" wide ABS plastic, with the outer fenderette 2.38" wide polished stainless steel.

\_\_\_\_\_ **293. CAB WINDOWS**

- 293.1 Fixed cab side windows, 16.00" x 26.00" (416 sq.in.) shall be installed behind the front cab doors one each side of the cab.
- 293.1.1 Each window shall be the same height as the windshield

\_\_\_\_\_ **294. EXTERIOR CAB ASSIST HANDLES**

- 294.1 Four (4) 18" knurled anti-slip one piece stainless steel exterior assist handles shall be installed, one (1) behind each cab door.

Meets Specs.  
Yes   No

Company Name \_\_\_\_\_

- \_\_\_\_\_   295. CAB MIRRORS
- 295.1   Two Ramco bus style heated mirrors with full electric adjustment from dash mounted controls.
- 295.1.1   The mirrors are to be mounted on the front corners of the cab so the driver can view them through the windshield.
- \_\_\_\_\_   296. EXTERIOR PAINT
- 296.1   All cab painting must be completed prior to the installation of glass, accessories or any other cab trim to assure complete paint coverage and maximum corrosion protection.
- 296.2   The entire cab must be disc ground to remove any surface oxidation or surface debris that may hinder the paint adhesion.
- 296.3   Upon the application of required body fillers and their preparation, the cab shall be primed with a coating designed for corrosion resistance and surfacer paint adhesion.
- 296.3.1   The entire cab then shall be coated with an intermediate surfacer that is designed to fill minor surface defects, provide an adhesive bond between the primer and the paint, and improve the color and gloss retention of the color coats.
- 296.4   The cab shall be finish sanded and painted with two (2) to four (4) coats of an acrylic urethane type system designed not only for color retention but to resist acid rain and most atmospheric chemicals found on the fire ground or emergency scene.
- 296.5   The maximum overall film thickness of the top coat shall not exceed five (5) mills.
- 296.6   PPG (DBHS or DCC), Sikkens FLNA or Dupont Imron (5000 or 6000) paint shall be warranted for seven (7) years against cracking, checking or peeling and loss of gloss caused by chalking or fading.
- 296.7   Cab underside and doors shall be rustproofed with a ten (10) year or 100,000 mile warranty certificate against perforation issued in the Fire Department's name.
- \_\_\_\_\_   297. SPECIAL PAINT BREAK LINE
- 297.1   A special paint break line shall be used to replace the standard paint break line through the cab door handles.
- \_\_\_\_\_   298. STRIPE PAINT BREAK LINE
- 298.1   A 5/8" Gold reflective tape with black borders shall be applied to the two-tone paint break line on the cab.
- \_\_\_\_\_   299. HAND SAND AND BUFF FINISH
- 299.1   The base coat clear coat finish shall be machine polished after wet sanding to achieve a flat finish.
- \_\_\_\_\_   300. OPERATORS MANUAL AND PARTS MANUAL
- 300.1   A chassis operators manual and parts manual with wiring and air plumbing diagrams shall be provided.
- 300.1.1   Two (2) complete service manuals for all components and items installed in or on the unit shall be provided.
- 300.1.2   Two (2) parts lists and diagrams for all items installed by the manufacture shall be provided.
- 300.1.3   Two (2) as built wiring diagrams and air plumbing diagrams shall be provided.
- 300.2   Final payment for the units will not be made until all the manuals are provided.
- \_\_\_\_\_   301. ENGINE AND TRANSMISSION OPERATION MANUAL
- 301.1   One (1) engine operation and maintenance manual and one (1) transmission operation manual shall be included.



Meets Specs.  
Yes No

Company Name \_\_\_\_\_

_____	_____	<b>302. CUMMINS ISL ENGINE SERVICE MANUALS</b>	
		302.1 The following Cummins ISL engine service reference manuals shall be provided:	
		302.1.1 Engine Troubleshooting and Repair Manual	
		302.1.2 Electronic Control System Troubleshooting and Repair Manual	
		302.1.3 Operation and Maintenance Manual	
		302.1.4 Wiring Diagram	
		302.1.5 Parts Catalog	
		302.1.6 Features Manual	
_____	_____	<b>303. ALLISON 3000 EVS TRANSMISSION SERVICE MANUALS</b>	
		303.1 The following Allison 3000 EVS transmission service and reference manuals shall be provided:	
		303.1.1 PC2809EN Parts Catalog	
		303.1.2 SM2148EN Service Manual	
		303.1.3 GN2055EN Technician Guide	
		303.1.4 TS2973EN Electronic Controls Troubleshooting Manual	
_____	_____	<b>304. WABCO ABS COMPUTER SOFTWARE</b>	
		304.1 Computer diagnostic software shall be supplied for the Wabco anti-lock brake system transmission.	
_____	_____	<b>305. WELDON V-MUX SOFTWARE</b>	
		305.1 Computer diagnostic software, transceiver, and connecting cables shall be provided for the system provided, such as the Weldon V-Mux Multiplex system, or equal.	
_____	_____	<b>306. FIRE EXTINGUISHER</b>	
		306.1 A 2.5 lb. BC DOT approved fire extinguisher shall be shipped loose with the cab.	
_____	_____	<b>307. ACCESSORIES TO BE SUPPLIED WITH EACH UNIT</b>	
_____	_____	1 14' fiberglass roof ladder Duo Safety 775A	
_____	_____	1 24' fiberglass 2 section extension ladder Duo Safety 900 A	
_____	_____	1 10' fiberglass folding ladder with safety shoes Duo Safety 585A with brackets	
_____	_____	1 6 lb flathead axe, fiberglass handle	
_____	_____	1 6 lb pick head axe, fiberglass handle	
_____	_____	1 20lb dry chemical fire extinguisher with bracket	
_____	_____	1 48" Johnson bar with chrome spring loader holder	
_____	_____	1 25' section air hose with tire inflator fitting	
_____	_____	1 15lb CO2 fire extinguisher with mounting bracket	
_____	_____	1 5" Storz X (2) 2 1/2" LSHT F WYE Snap-Tite FSS50FT25LST	
_____	_____	2 5" Storz blind caps #BS50	
_____	_____	1 5" Storz x 2 1/2" LSHT M	
_____	_____	2 6" x 5" Storz adapter with cap Snap-Tite AS50T60NERB	
_____	_____	<b>308. OPTIONAL EQUIPMENT</b>	
		308.1 The following optional equipment to be individually priced.	
		308.1.1 The City of Lincoln may exercise its option to purchase any or all of the equipment listed below.	
		308.1.2 List pricing for optional equipment on page 61	
_____	_____	20 50' 2 1/2" lightweight hose, Lincoln Standard Hose thread Angus	
_____	_____	15 50' 1 3/4" lightweight hose, NST Angus	
_____	_____	1 50' 5" lightweight Hi-Vol with Storz Angus	
_____	_____	7 100' 5" lightweight Hi-Vol with Storz Angus	
_____	_____	3 Mid Range Turbojet nozzles color coded handles and pistol grips to match discharge levers Akron 1723	
_____	_____	1 1" Assault Nozzle with color coded handle and pistol grip to match discharge levers Akron 4812	

**Meets Specs.****Yes No****Company Name**

_____	_____	2	Turbojet Nozzles	Lincoln Thread Akron 2730
_____	_____	2	2 ½" triple stacked tips, Pyrolite	Akron 1420
_____	_____	2	2 ½" Axial Playpipe, Pyrolite	Lincoln Thread Akron 2390
_____	_____	6	2 ½" nozzle holders	
_____	_____	2	Sets 5" Storz spanner wrenches	
_____	_____	3	Sets 2 ½" spanner wrenches with holder	Akron 448
_____	_____	2	Hydrant wrench sets	
_____	_____	4	Hose straps	Gemtor 543
_____	_____	4	Jimmy Bars	Vaughan Superbar #B215
_____	_____	2	2 ½" F x F couplings, Lincoln Standard Hose Thread	
_____	_____	2	2 ½" M x M couplings, Lincoln Standard Hose Thread	
_____	_____	2	2 ½" female Lincoln Thread x 1 ½" male NST reducers	
_____	_____	1	Gated Wye, 2 2 ½" LSHT x 1 1 ½" NST	
_____	_____	1	36" Haligan tool with mount #36	Zephyr Industries
_____	_____	1	3 lb dead blow hammer	Stanley #5753
_____	_____	1	100' 1 ½" NST High rise single jacket hose	National Fire Hose 44-RR-55
_____	_____	1	1 ½" NST Poly Carbon combo nozzle	NFPA Compliant
_____	_____	1	Setcom intercom system. Four (4) headsets, five (5) connections, including installation	
_____	_____	1	Pair wheel chocks, mounted	Zico #SAC-44
_____	_____	4	Vulcan waterproof 6 volt rechargeable lanterns including charges, installed	
_____	_____	1	10' D-Ring pike pole	
_____	_____	1	6' D-Ring pike pole	
_____	_____	1	4' D-Ring drywall hook pike pole	
_____	_____	1	Safety Vision rear vision camera #SV-CLCD-65	

**309. TRADE-IN APPARATUS**

- 309.1 Trade-ins are offered on an as-is where-is basis.
- 309.1.1 No warranties whether expressed or implied are intended regarding the condition of the equipment or fitness of the equipment for specific applications.
- 309.2 In the event the City of Lincoln accepts the bidder's trade-in allowances, the bidder is responsible for all transportation of the equipment from City premises.
- 309.3 The City reserves the right to include trade-in allowances in the evaluation of bids, or to not give any consideration to trade-in allowances.
- 309.4 Dependent upon trade in amounts, the City may desire not to trade-in said equipment to the low bidder of the new equipment, but to sell the equipment offered for trade direct to the high bidder.
- 309.4.1 Bidders are advised to take this into consideration when preparing their bid.
- 309.5 Bidders will be permitted to submit a bid for the out-right purchase of the trade-in apparatus.
- 309.6 Bidders shall indicate on their proposal form their trade-in allowances for the following equipment:

**310. TRADE-IN OR SELL**

_____	_____	Engine #8	1990	Central States	1FDXD80UOLVA31353
_____	_____	Engine #12	1989	Smeal	1FDXD80U9KVA30247
_____	_____	Engine #14	1988	Smeal	1FDXD80U4JV17792
_____	_____	Engine #22	1986	Smeal	1FDYD80UXGVA16210
_____	_____	Engine #34	1984	FMC	1FDYD84N5EVA12713
_____	_____	Engine #11	1980	Smeal	D80UVHG7918
_____	_____	Engine #4	1992	Ferrara	4S7PT9SOXNC006089
_____	_____	Engine #5	1992	Central States	4S7PT9S08NC004468
_____	_____	Engine #6	1994	E-One	4ENRAAA85R1003921
_____	_____	Engine #10	1993	Central States	4S7CT9K02PC008663

**310.1 Fire Apparatus only.**

- 310.1.1 No hoses, ladders, or loose equipment included in trade-in.
- 310.2 Bidders shall contact the Deputy Chief of Maintenance at (402) 441-7040 to arrange an inspection of the equipment offered for trade-in or sale.
- 310.3 Maintenance histories are available for inspection at the equipment location.
- 310.4 Trade-ins will be available after new units are placed in service.

## OPTIONAL EQUIPMENT PRICING SHEET

Item No.	Qty.	Description	Unit Price	Total Price
1.	20	50' 2 ½" lightweight hose, Lincoln Standard Hose thread Angus	\$ _____	\$ _____
2.	15	50' 1 ¾" lightweight hose, NST Angus	\$ _____	\$ _____
3.	1	50' 5" lightweight Hi-Vol with Storz Angus	\$ _____	\$ _____
4.	7	100' 5" lightweight Hi-Vol with Storz Angus	\$ _____	\$ _____
5.	3	Mid Range Turbojet nozzles color coded to match discharge levers Akron 1723	\$ _____	\$ _____
6.	1	1" Assault Nozzle with color coded handle and pistol grip to match discharge levers Akron 4812	\$ _____	\$ _____
7.	2	Turbojet Nozzles Lincoln Thread Akron 2730	\$ _____	\$ _____
8.	2	2 ½" triple stacked tips, Pyrolite Akron 1420	\$ _____	\$ _____
9.	2	2 ½" Axial Playpipe, Pyrolite Lincoln Thread Akron 2390	\$ _____	\$ _____
10.	6	2 ½" nozzle holders	\$ _____	\$ _____
11.	2	Sets 5" Storz spanner wrenches	\$ _____	\$ _____
12.	3	Sets 2 ½" spanner wrenches with holder Akron 448	\$ _____	\$ _____
13.	2	Hydrant wrench sets	\$ _____	\$ _____
14.	4	Hose straps Gemtor 543	\$ _____	\$ _____
15.	4	Jimmy Bars Vaughan Superbar #B215	\$ _____	\$ _____
16.	2	2 ½" F x F couplings, Lincoln Standard Hose Thread	\$ _____	\$ _____
17.	2	2 ½" M x M couplings, Lincoln Standard Hose Thread	\$ _____	\$ _____
18.	2	2 ½" female Lincoln Thread x 1 ½" male NST reducers	\$ _____	\$ _____
19.	1	Gated Wye, 2 2 ½" LSHT x 1 1 ½" NST	\$ _____	\$ _____
20.	1	36" Haligan tool with mount #36 Zephyr Industries	\$ _____	\$ _____
21.	1	3 lb dead blow hammer Stanley #5753	\$ _____	\$ _____
22.	1	100' 1 ½" NST High rise single jacket hose National Fire Hose 44-RR-55	\$ _____	\$ _____
23.	1	1 ½" NST Poly Carbon nozzle Beco Model 15	\$ _____	\$ _____
24.	1	Setcom intercom system. Four (4) headsets, five (5) connections, including installation	\$ _____	\$ _____
25.	1	Pair wheel chocks, mounted Zico #SAC-44	\$ _____	\$ _____
26.	4	Vulcan waterproof 6 volt rechargeable lanterns including charges, installed	\$ _____	\$ _____
27.	1	10' D-Ring pike pole	\$ _____	\$ _____
28.	1	6' D-Ring pike pole	\$ _____	\$ _____
29.	1	4' D-Ring drywall hook pike pole	\$ _____	\$ _____
30.	1	Safety Vision rear vision camera # SV-CLCD-65, including installation	\$ _____	\$ _____

Total Optional Equipment

\$ \_\_\_\_\_

# **INSTRUCTIONS TO BIDDERS**

## **CITY OF LINCOLN, NEBRASKA**

### **PURCHASING DIVISION**

#### **1. BIDDING PROCEDURE**

- 1.1 Bidder shall submit two (2) complete sets of the bid documents and all supporting material. All appropriate blanks shall be completed. Any interlineation, alteration or erasure on the specification document shall be initialed by the signer of the bid. Bidders shall not change the proposal form nor make additional stipulations on the specification document. Any amplified or qualifying information shall be on the bidder's letterhead and firmly attached to the specification document.
- 1.2 Bid prices shall be submitted on the Proposal Form included in the bid document.
- 1.3 Bidders may submit a bid on an "all or none" or "lump sum" basis, but should also submit a quotation on an item-by-item basis. Bidding documents shall be clearly marked indicating the kind of proposal being submitted.
- 1.4 Each bid must be legibly printed in ink or by typewriter, include the full name, business address, and telephone number of the bidder; and be signed in ink by the bidder.
- 1.5 A bid by a firm or organization other than a corporation must include the name and address of each member.
- 1.6 A bid by a corporation must be signed in the name of such corporation by a duly authorized official thereof.
- 1.7 Any person signing a bid for a firm, corporation, or other organization must show evidence of his authority so to bind such firm, corporation, or organization.
- 1.8 Bids received after the time and date established for receiving bids will be rejected.

#### **2. BIDDER'S SECURITY**

- 2.1 Bid security, as a guarantee of good faith, in the form of a certified check, cashier's check, or bidder's bond, may be required to be submitted with this bid document, as indicated on the Proposal Form.
- 2.2 If alternate bids are submitted, only one bid security will be required, provided the bid security is based on the amount of the highest gross bid.
- 2.3 Such bid security will be returned to the unsuccessful bidders when the award of bid is made.
- 2.4 Bid security will be returned to the successful bidder(s) as follows:
  - 2.4.1 For single order bids with specified quantities: upon the delivery of all equipment or merchandise, and upon final acceptance by the City.
  - 2.4.2 For all other contracts: upon approval by the City of the executed contract and bonds.
- 2.5 City shall have the right to retain the bid security of bidders to whom an award is being considered until either:
  - 2.5.1 A contract has been executed and bonds have been furnished.
  - 2.5.2 The specified time has elapsed so that the bids may be withdrawn.
  - 2.5.3 All bids have been rejected.

- 2.6 Bid security will be forfeited to the City as full liquidated damages, but not as a penalty, for any of the following reasons, as pertains to this specification document:

- 2.6.1 If the bidder fails to deliver the equipment or merchandise in full compliance with the accepted proposal and specifications.
- 2.6.2 If the bidder fails or refuses to enter into a contract on forms provided by the City, and/or if the bidder fails to provide sufficient bonds or insurance within the time period as established in this specification document.

#### **3. EQUAL OPPORTUNITY**

- 3.1 Each bidder agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, ancestry, disability, age, or marital status. Bidder shall fully comply with the provisions of Chapter 11.08 of the Lincoln Municipal Code.
- 3.2 Successful bidder will be required to comply with the provisions of the City's Affirmative Action Policy (Contract Compliance, Sec. 1.16).
- 3.3 The Equal Opportunity Officer will determine compliance or non-compliance with the City's Affirmative Action Policy upon a complete and substantial review of successful bidder's equal opportunity policies, procedures and practices.

#### **4. DATA PRIVACY**

- 4.1 Bidder agrees to abide by all applicable State and Federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, copyrights, patents and patent rights.
- 4.2 The bidder agrees to hold the City harmless from any claims resulting from the bidder's unlawful disclosure or use of private or confidential information.

#### **5. BIDDER'S REPRESENTATION**

- 5.1 Each bidder by signing and submitting a bid, represents that the bidder has read and understands the specification documents, and the bid has been made in accordance therewith.
- 5.2 Each bidder for services further represents that the bidder is familiar with the local conditions under which the work is to be done and has correlated the observations with the requirements of the bid documents.

#### **6. INDEPENDENT PRICE DETERMINATION**

- 6.1 By signing and submitting this bid, the bidder certifies that the prices in this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder prior to bid opening directly or indirectly to any other bidder or to any competitor; no attempt has been made, or will be made, by the bidder to induce any person or firm to submit, or not to submit, a bid for the purpose of restricting competition.

## **7. CLARIFICATION OF SPECIFICATION DOCUMENTS**

- 7.1 Bidders shall promptly notify the Purchasing Agent of any ambiguity, inconsistency or error which they may discover upon examination of the specification documents.
- 7.2 Bidders desiring clarification or interpretation of the specification documents shall make a written request which must reach the Purchasing Agent at least seven (7) calendar days prior to the date and time for receipt of bids.
- 7.3 Interpretations, corrections and changes made to the specification documents will be made by written addenda.
- 7.4 Oral interpretations or changes to the Specification Documents made in any other manner, will not be binding on the City; and bidders shall not rely upon such interpretations or changes.

## **8. ADDENDA**

- 8.1 Addenda are written instruments issued by the City prior to the date for receipt of bids which modify or interpret the specification document by addition, deletion, clarification or correction.
- 8.2 Addenda will be mailed or delivered to all who are known by the City to have received a complete set of specification documents.
- 8.3 Copies of addenda will be made available for inspection at the office of the Purchasing Agent.
- 8.4 No addendum will be issued later than forty-eight (48) hours prior to the date and time for receipt of bids, except an addendum withdrawing the invitation to bid, or an addendum which includes postponement of the bid.
- 8.5 Bidders shall ascertain prior to submitting their bid that they have received all addenda issued, and they shall acknowledge receipt of addenda on the proposal form.

## **9. ANTI-LOBBYING PROVISION**

- 9.1 During the period between the bid close date and the contract award, bidders, including their agents and representatives, shall not directly discuss or promote their bid with any member of the City Council or City Staff except in the course of City-sponsored inquiries, briefings, interviews, or presentations, unless requested by the City.

## **10. BRAND NAMES**

- 10.1 Wherever in the specifications or proposal form brand names, manufacturer, trade name, or catalog numbers are specified, it is for the purpose of establishing a grade or quality of material only; and the term "or equal" is deemed to follow.
- 10.2 It is the bidder's responsibility to identify any alternate items offered in the bid, and prove to the satisfaction of the City that said item is equal to, or better than, the product specified.
- 10.3 Bids for alternate items shall be stated in the appropriate brand on the proposal form, or if the proposal form does not contain blanks for alternates, bidder MUST attach to the specification documents on Company letterhead a statement identifying the manufacturer and brand name of each proposed alternate, plus a complete description of the alternate items including illustrations, performance test data and any other information necessary for an evaluation. The bidder must indicate any variances by item number from the specification

document no matter how slight. Bidder must fully explain the variances from the specification document, since brochure information may not be sufficient.

- 10.4 If variations are not stated in the proposal, it will be assumed that the item being bid fully complies with the City's specifications.

## **11. DEMONSTRATIONS/SAMPLES**

- 11.1 Bidders shall demonstrate the exact item(s) proposed within seven (7) calendar days from receipt of such request from the City.
- 11.2 Such demonstration can be at the City delivery location or a surrounding community.
- 11.3 If bidder does not have an item in the area, it will be at the bidder's expense to send appropriate City personnel to the nearest location to view and inspect proposed item(s).
- 11.4 If items are small and malleable, and the bidder is proposing an alternate product, the bidder MUST supply a sample of the exact item. Samples will be returned at bidder's expense after receipt by the City of acceptable goods. Bidders must indicate how samples are to be returned.

## **12. DELIVERY**

- 12.1 Each bidder shall state on his proposal form the date upon which he can make delivery of all equipment or merchandise. Time required for delivery is hereby made an essential element of the bid.
- 12.2 The City reserves the right to cancel orders, or any part thereof, without obligation, if delivery is not made within the time(s) specified on the proposal form.
- 12.3 All bids shall be based upon **inside** delivery of the equipment or merchandise F.O.B. the City at the location specified by the City, with all transportation charges paid.

## **13. WARRANTIES, GUARANTEES AND MAINTENANCE**

- 13.1 Copies of the following documents must accompany the bid proposal for all items being bid:
  - 13.1.1 Manufacturer's warranties and/or guarantees.
  - 13.1.2 Bidder's maintenance policies and associated costs.
- 13.2 As a minimum requirement of the City, the bidder will guarantee in writing that any defective components discovered within a one (1) year period after the date of acceptance shall be replaced at no expense to the City. Replacement parts of defective components shall be shipped at no cost to the City. Shipping costs for defective parts required to be returned to the bidder shall be paid by the bidder.
- 13.3 Bidder Warrants and represents to the City that all software/firmware/hardware/equipment/systems developed, distributed, installed or programmed by Bidder pursuant to this Specification and Agreement.
  - 13.3.1 That all date recognition and processing by the software/firmware/hardware/equipment/system will include the four-digit-year format and will correctly recognize and process the date of February 29, and any related data, during Leap years; and
  - 13.3.2 That all date sorting by the software /firmware/hardware/equipment/system that includes a "year category" shall be done based on the four-digit-year format. Upon being notified in writing by the City of the failure of any software/ firmware/

hardware /equipment /systems to comply with this Specification and Agreement, Contractor will, within 60 days and at no cost to the City, replace or correct the non-complying software/ firmware/ hardware/ equipment/ systems with software/firmware/ hardware/equipment/ systems that does comply with this Specification and Agreement.

- 13.3.3 No Disclaimers: The warranties and representations set forth in this section 13.3 shall not be subject to any disclaimer or exclusion of warranties or to any limitations of Licensor's liability under this Specification and Agreement.

#### **14. ACCEPTANCE OF MATERIAL**

- 14.1 All components used in the manufacture or construction of materials, supplies and equipment, and all finished materials, shall be new, the latest make/model, of the best quality, and the highest grade workmanship.
- 14.2 Material delivered under this proposal shall remain the property of the bidder until:
- 14.2.1 A physical inspection and actual usage of this material is made and found to be acceptable to the City; and
- 14.2.2 Material is determined to be in full compliance with the specifications and accepted proposal.
- 14.3 In the event the delivered material is found to be defective or does not conform to the specification documents and accepted proposal, then the City reserves the right to cancel the order upon written notice to the bidder and return materials to the bidder at bidder's expense.
- 14.4 Successful bidder shall be required to furnish title to the material, free and clear of all liens and encumbrances, issued in the name of the City of Lincoln, Nebraska, as required by the specification documents or purchase orders.
- 14.5 Selling dealer's advertising decals, stickers or other signs shall not be affixed to equipment. Vehicle mud flaps shall be installed blank side out with no advertisements. Manufacturer's standard production forgings, stampings, nameplates and logos are acceptable.

#### **15. BID EVALUATION AND AWARD**

- 15.1 The signed bid proposal shall be considered an offer on the part of the bidder. Such offer shall be deemed accepted upon issuance by the City of purchase orders, contract award notifications, or other contract documents appropriate to the work.
- 15.2 No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids, and each bidder so agrees in submitting the bid.
- 15.3 In case of a discrepancy between the unit prices and their extensions, the unit prices shall govern.
- 15.4 The bid will be awarded to the lowest responsive, responsible bidder whose proposal will be most advantageous to the City, and as the City deems will best serve their requirements.
- 15.5 The City reserves the right to accept or reject any or all bids; to request rebids; to award bids item-by-item, by groups, or "lump sum"; to waive irregularities and technicalities in bids; such as shall best serve the requirements and interests of the City.

#### **16. INDEMNIFICATION**

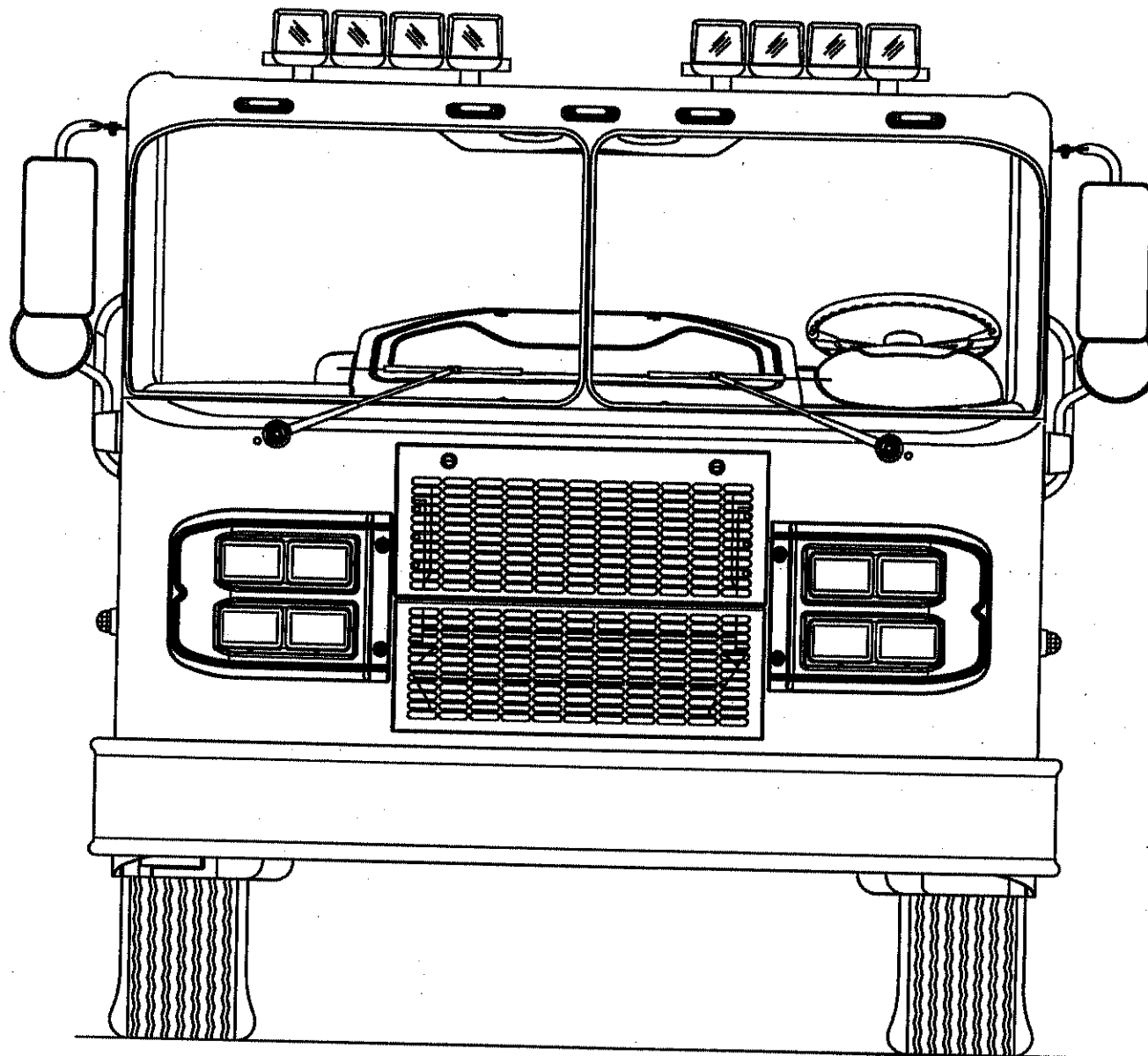
- 16.1 The bidder shall indemnify and hold harmless the City, its members, its officers and employees from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees arising out of or resulting from the performance of the contract, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property other than goods, materials and equipment furnished under this contract) including the loss or use resulting therefrom; is caused in whole or part by any negligent act or omission of the bidder, any subcontractor, or anyone directly or indirectly employed by any one of them or anyone for whose acts made by any of them may be liable, regardless of whether or not it is caused by a party indemnified hereunder.
- 16.2 In any and all claims against the City or any of its members, officers or employees by an employee of the bidder, any subcontractor, anyone directly or indirectly employed by any of them or by anyone for whose acts made by any of them may be liable, the indemnification obligation under paragraph 16.1 shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the bidder or any subcontractor under worker's or workmen's compensation acts, disability benefit acts or other employee benefit acts.

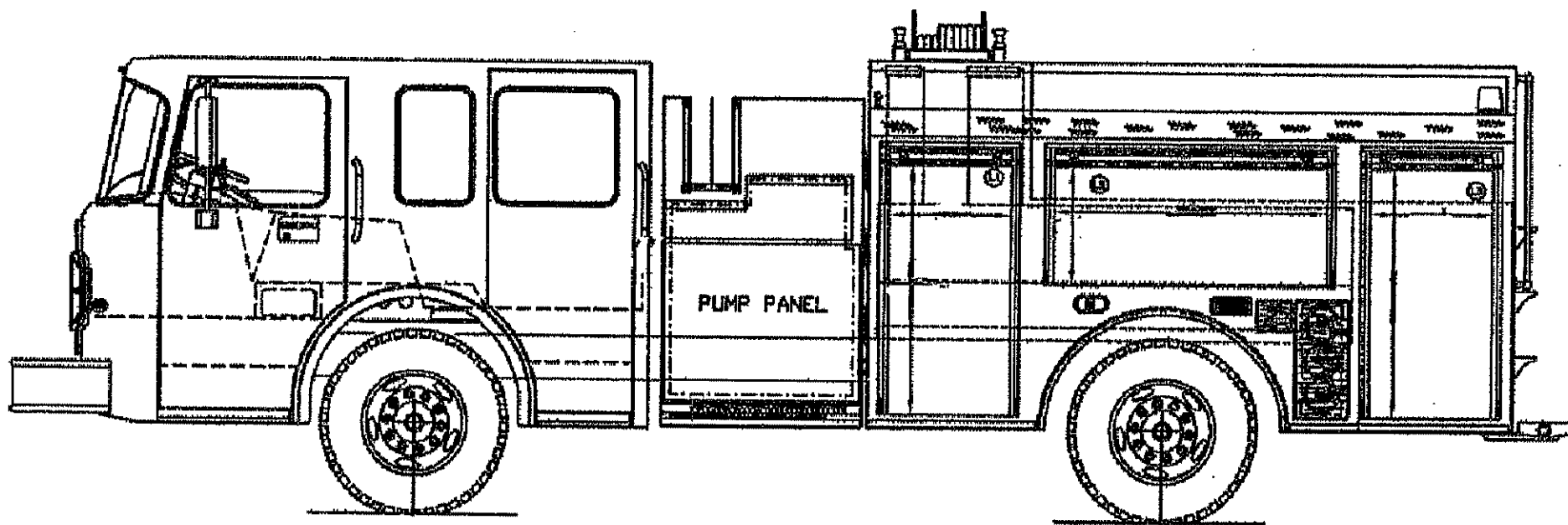
#### **17. TERMS OF PAYMENT**

- 17.1 Unless other specification provisions state otherwise, payment in full will be made by the City within thirty (30) calendar days after all labor has been performed and all equipment or other merchandise has been delivered, and all such labor and equipment and other materials have met all contract specifications.

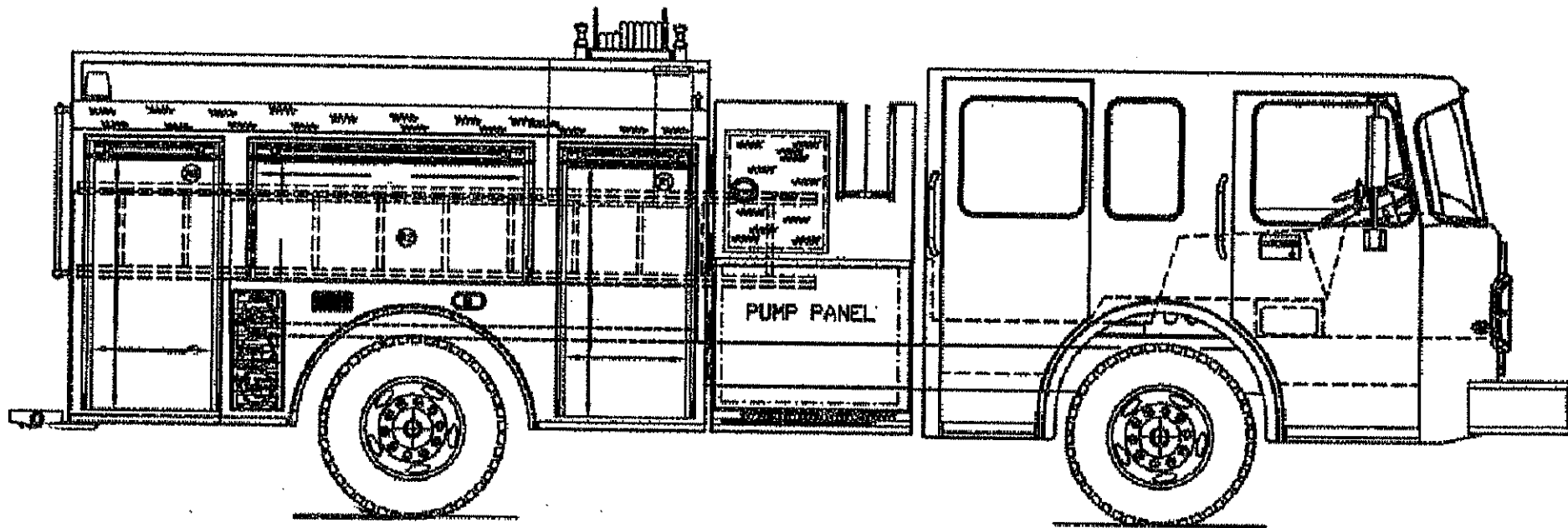
#### **18. LAWS**

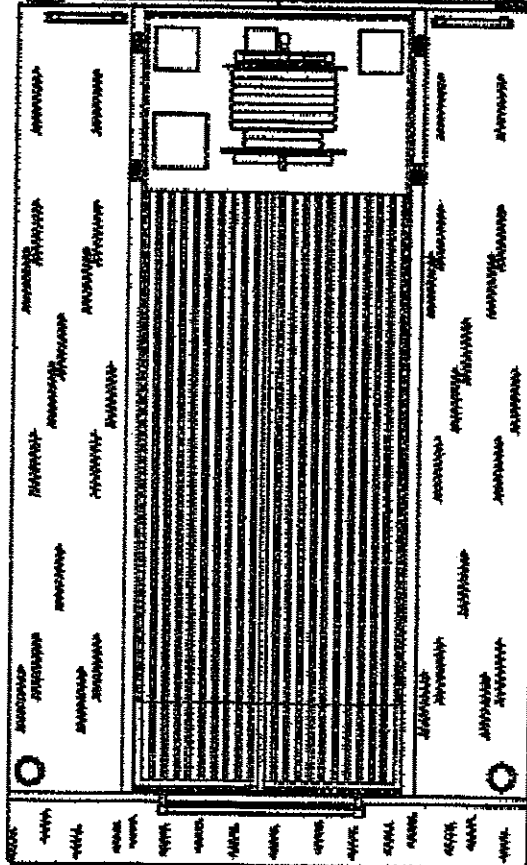
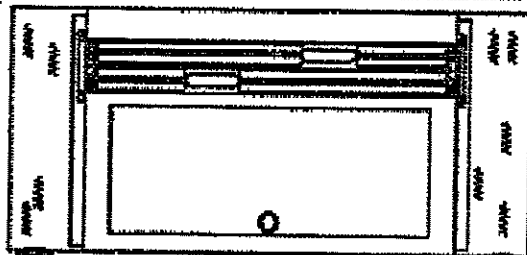
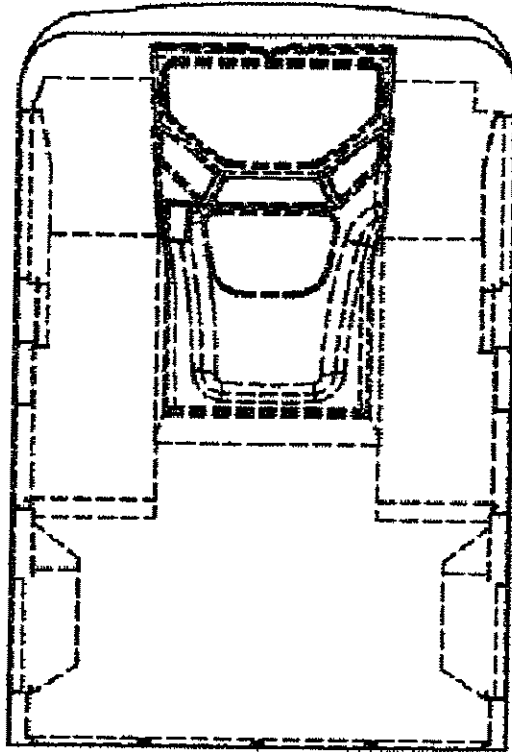
- 18.1 The Laws of the State of Nebraska shall govern the rights, obligations, and remedies of the Parties under this proposal and any agreement reached as a result of this process.

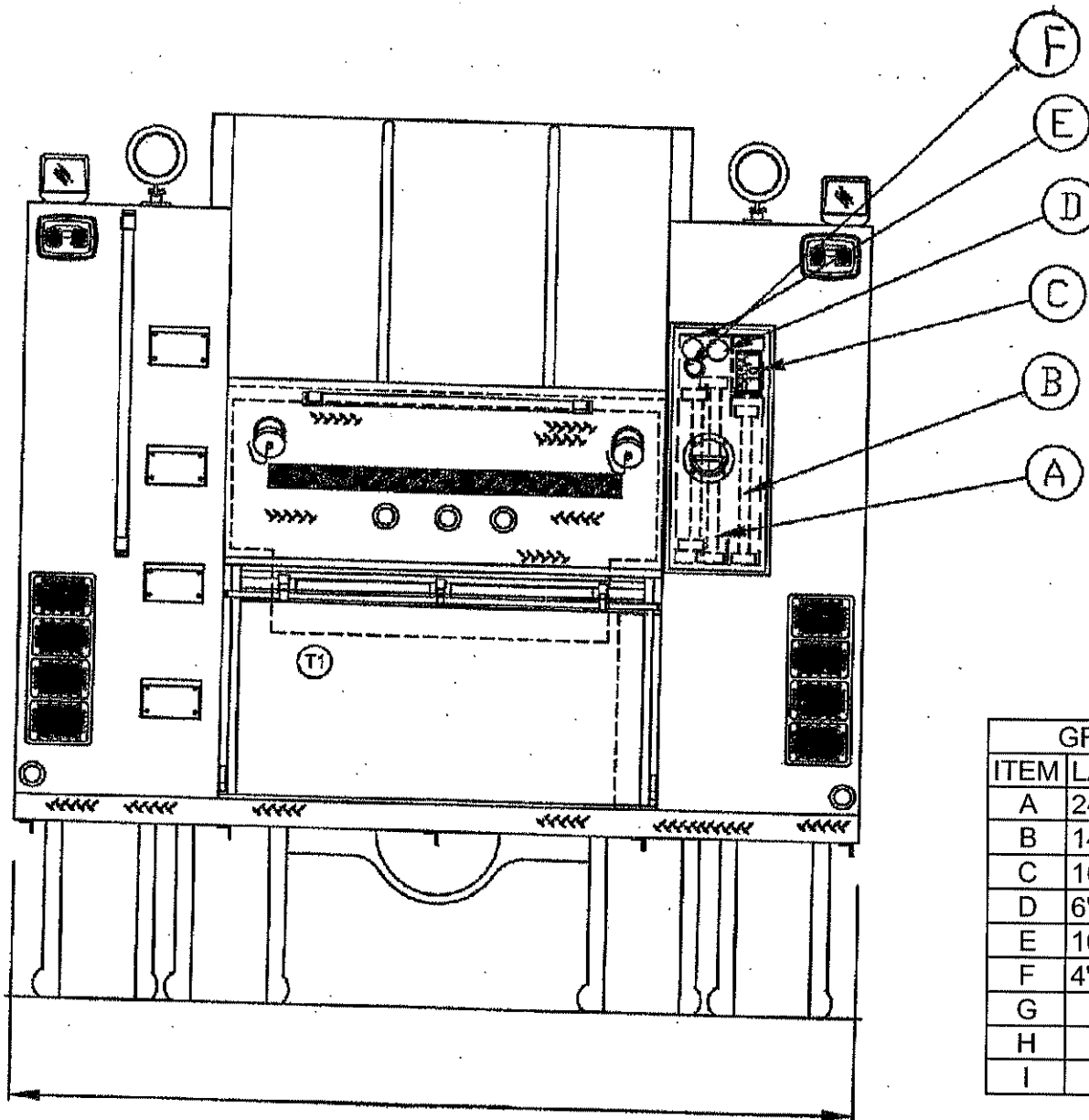






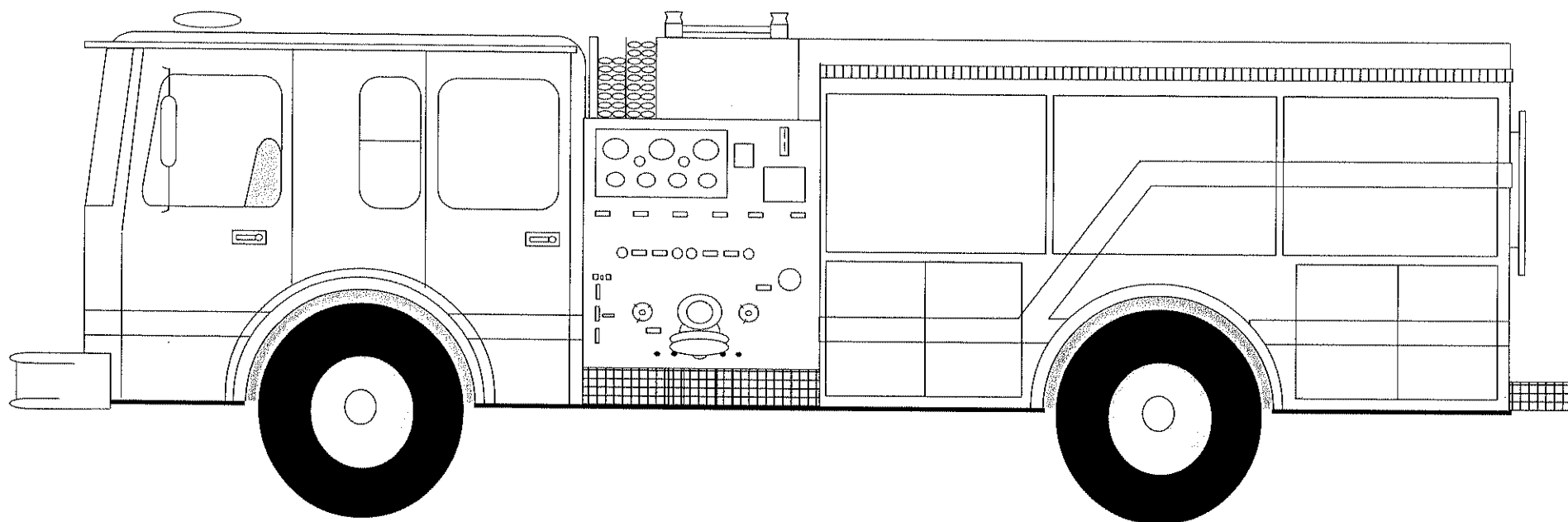


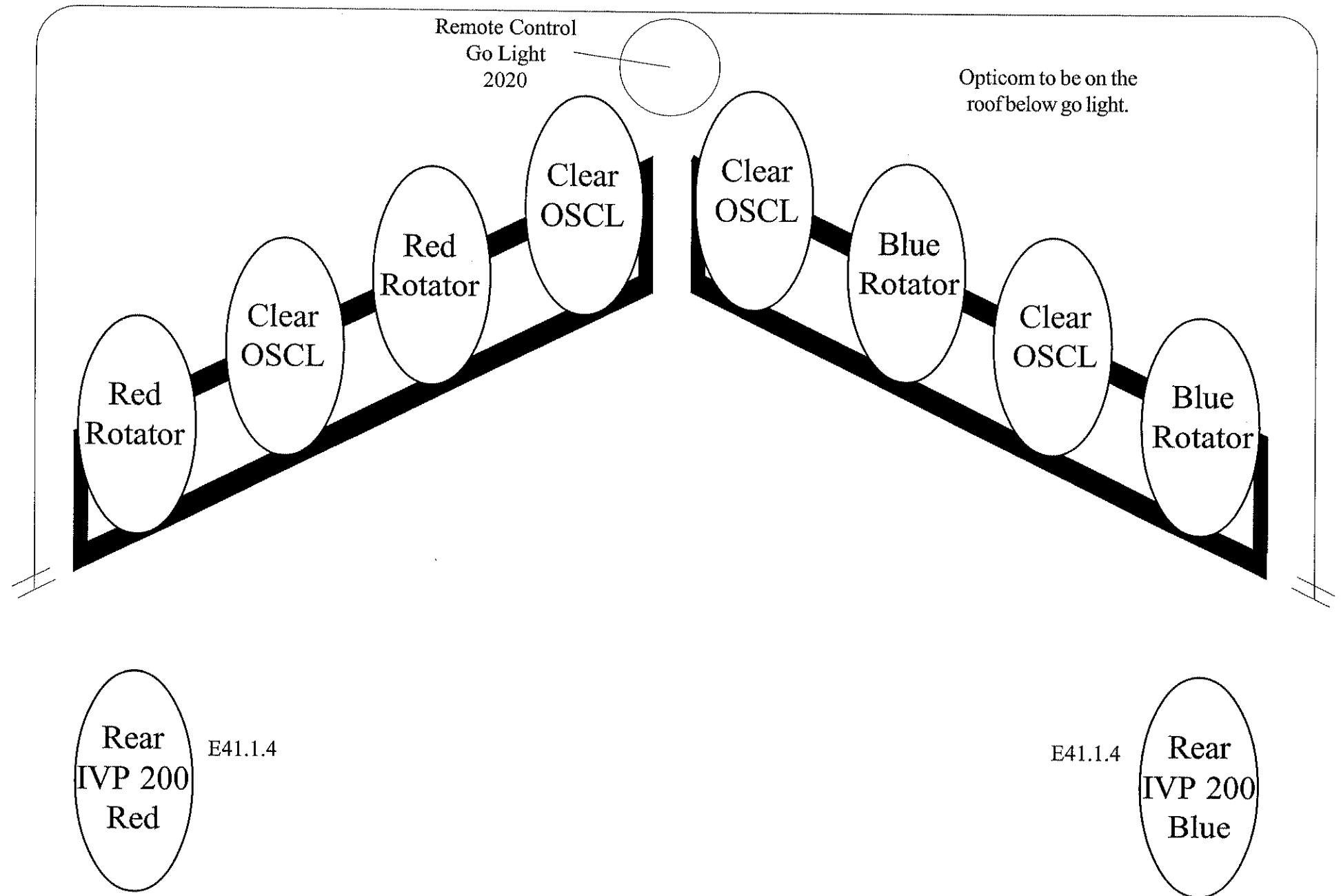




GROUND LADDERS & PIKE POLES			
ITEM	LADDER LENGTH	MODEL	QTY
A	24' 2 SEC		1
B	14' ROOF		1
C	10' ATTIC		1
D	6' PIKE POLE		1
E	10' PIKE POLE		1
F	4' PIKE POLE		1
G			
H			
I			

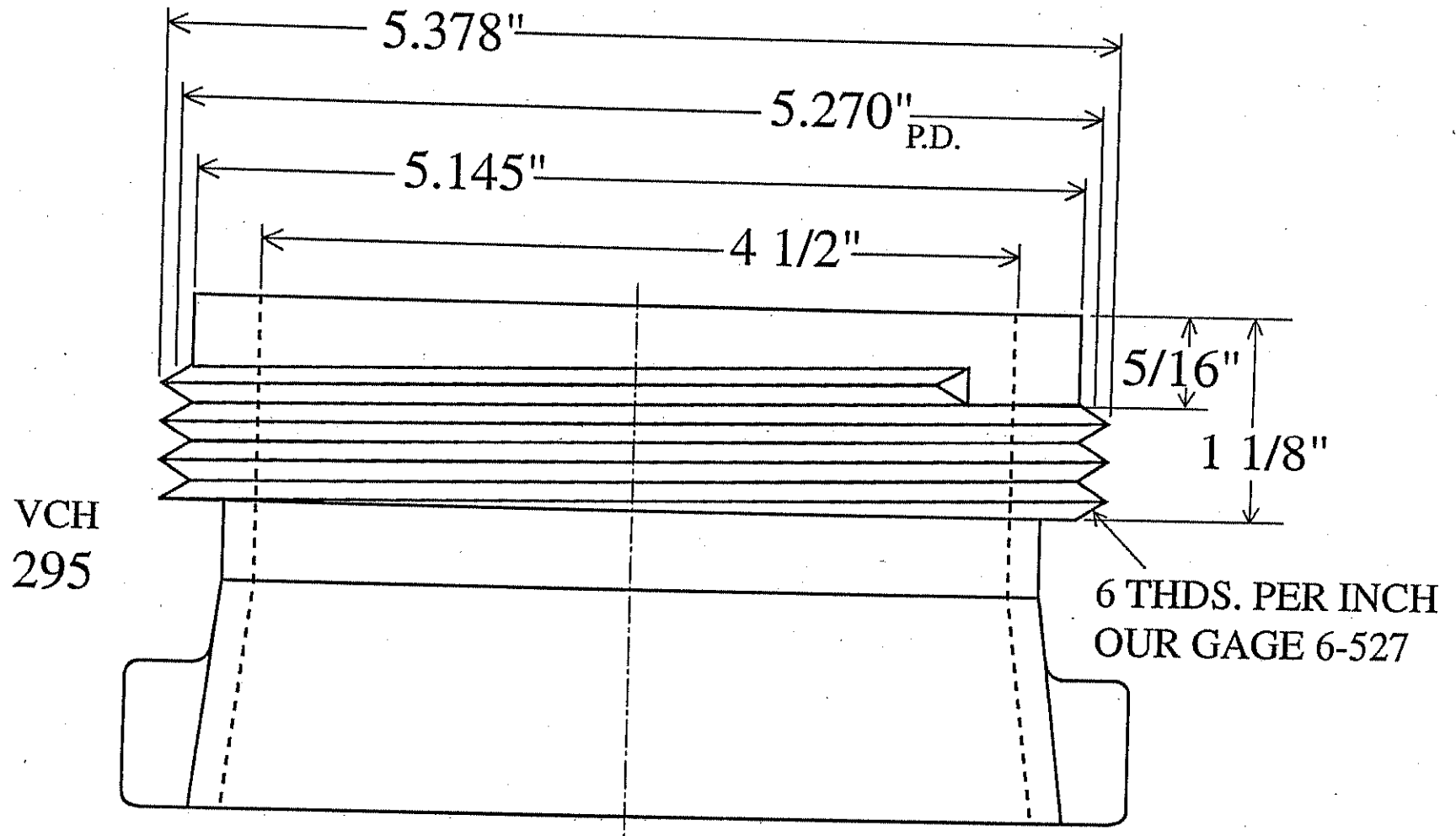
# STRIPING





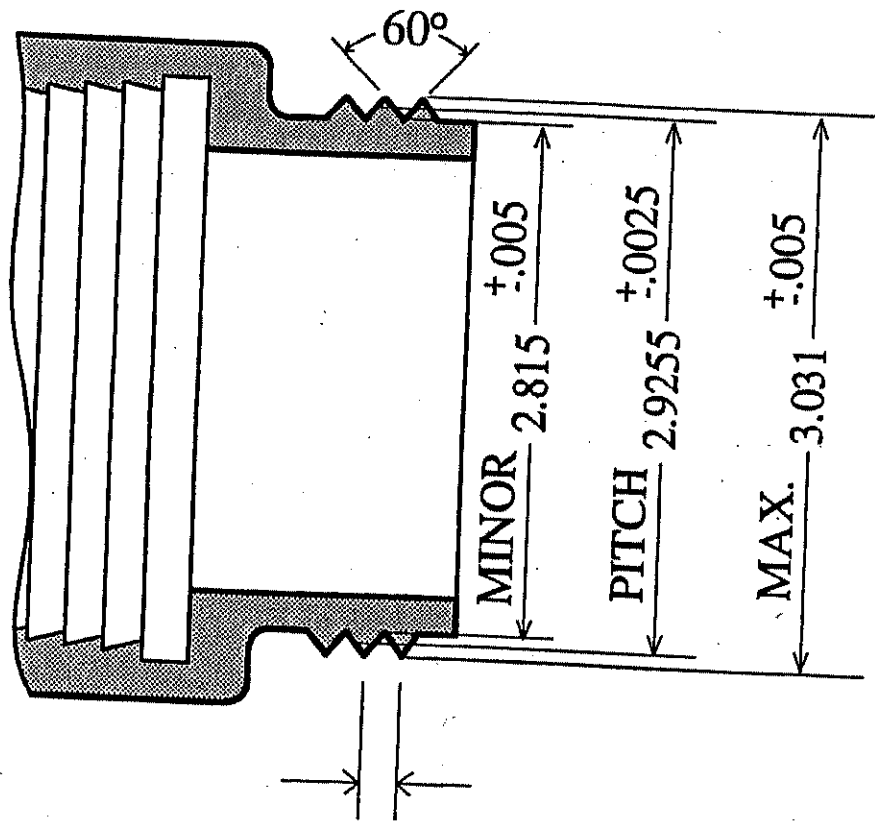
LINCOLN STEAMER.  
4 1/2" TO 5"

# OPERATING NUT - SQUARE



LINCOLN FIRE DEPARTMENT STEAMER ADAPTER

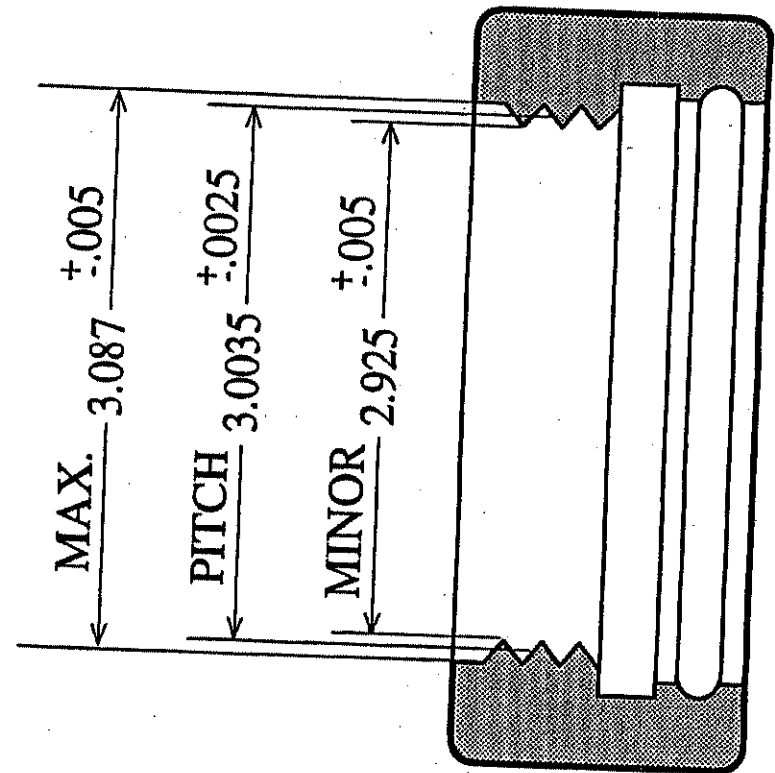
LINCOLN FIRE DEPARTMENT HOSE THREADS  
2 1/2" COUPLINGS



SHARP "V"

.216 D.D.

.046 SHAKE



NATIONAL FORM

.162 D.D.